IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
EASTERN DIVISION

IN RE: NATIONAL PRESCRIPTION OPIATE LITIGATION	)	MDL No. 2804
	)	Case No. 1:17-MD-2804
THIS DOCUMENT RELATES TO ALL CASES	)	Hon. Dan A. Polster

HIGHLY CONFIDENTIAL
SUBJECT TO FURTHER CONFIDENTIALITY REVIEW

VIDEOTAPED DEPOSITION OF
MARGARET KYLE, Ph.D.
June 5, 2019

Chicago, Illinois

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The videotaped deposition of MARGARET KYLE, Ph.D., called by the Plaintiffs for examination, taken pursuant to the Federal Rules of Civil Procedure of the United States District Courts pertaining to the taking of depositions, taken before CORINNE T. MARUT, C.S.R. No. 84-1968, Registered Professional Reporter and a Certified Shorthand Reporter of the State of Illinois, at the offices of Kirkland & Ellis LLP, Suite 700, 300 North LaSalle Street, Chicago, Illinois, on June 5, 2019, commencing at 9:13 a.m.

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I N D E X

E X H I B I T S

THE VIDEOGRAPHER: We are now on the record. My name is Anthony Micheletto. I'm a videographer for Golkow Litigation Services.

Today's date is June 5, 2019. The time is 9:13 a.m., as indicated on the video screen.

This video deposition is being held in Chicago, Illinois in the matter of In Re National Prescription Opiate Litigation, in the United States District Court for the Northern District of Ohio, Eastern Division.

Our witness is Margaret Kyle.

Will counsel please identify yourselves for the video record.

MS. GEMAN: Good morning. Rachel Geman. I represent the Plaintiffs in this action. I'm from the firm of Lieff Cabraser Heimann & Bernstein.

MS. COMENENCIA ORTIZ: Good morning. Valerie Comenencia Ortiz also representing the Plaintiffs with Lieff Cabraser.

MS. WELCH: Donna Welch with Kirkland & Ellis for Allergan and the witness.

MR. KNAPP: Tim Knapp of Kirkland on behalf of Allergan Plc and Allergan Finance.

MS. COONEY: Alison Cooney from Dechert on

behalf of Purdue Pharma.

MS. CASTLES: Claire Castles with Jones Day on behalf of Walmart.

MS. KABIA: Fatmata Kabia from Covington & Burling on behalf of McKesson.

THE REPORTER: Counsel on the phone.

MR. LEIGH: Daniel Leigh from O'Melveny & Myers on behalf of Janssen Defendants.

(WHEREUPON, the witness was duly sworn.)

MARGARET KYLE, Ph.D.,

called as a witness herein, having been first duly sworn, was examined and testified as follows:

EXAMINATION

BY MS. GEMAN:

Q. Good morning. My name is Rachel Geman. We met briefly off the record.

Do you prefer to be addressed as Dr. Kyle, Professor Kyle, something else?

A. Margaret.

Q. Margaret.

A. That's easiest.

Q. What is your address?

A. My home address?

Q. I'd love your home and business.

A. Okay. My home address is 38 Bis, B-i-s, Rue, R-u-e, Henri, H-e-n-r-i, Barbusse, B-a-r-b-u-s-s-e, in Paris.

Q. And is there a --

A. A zip code.

Q. -- a zip code or an arrondissement?

A. Yes.

Q. All right.

A. Yes. It's the -- 75005 is the postal code.

Q. Okay. And do you have an address in the U.S.?

A. I am resident in France. So, I have a voter registration address in the U.S. because I still am allowed to vote.

Q. Understood. And what is your business address?

A. It is MINES ParisTech is the institution. M-I-N-E-S. ParisTech is P-a-r-i-s-T-e-c-h. And it is 60 Boulevard, B-o-u-l-e-v-a-r-d, St. Michel, S-t, M-i-c-h-e-l. And its postal code is 75006, also in Paris.

Q. And I guess someone above my pay grade

can explain why we're not in Paris right now.

Have you been deposed before?

A. No, I have not.

Q. And I'm just going to ask. So, throughout the day I'm going to be handing you some documents that are marked as exhibits. There aren't that many. And the first such exhibit that I'm going to hand you is called Plaintiffs' Notice of Oral Videotaped Expert Deposition of Margaret Kyle.

(WHEREUPON, Allergan-Kyle Deposition Exhibit No. 1 was marked for identification: Plaintiff's Notice of Oral Videotaped Expert Deposition of Margaret Kyle.)

BY THE WITNESS:

A. Thank you.

BY MS. GEMAN:

Q. Have you seen this document before?

A. Yes, I have.

Q. And you understand you're here pursuant to this Notice?

A. Yes, that's my understanding.

Q. Have you ever been a party to a lawsuit,

meaning the Plaintiff or the Defendant?

A. No, I have not.

Q. Have you ever been a party to an arbitration proceeding or something that maybe wasn't in a court but which somebody brought a claim?

A. It's been a while. I was hit by a car in 2002, and there was a settlement with the driver of the car who hit me.

Q. That was in the U.S.?

A. That was in Pennsylvania.

Q. I see. And you were the Plaintiff?

A. Yes. I was the victim.

Q. I hope you're okay now.

And have you ever been retained as an expert in litigation?

A. Prior to this case, I was retained as an expert for another case. It was more than five years ago. And ultimately that case settled before I submitted an expert report.

Q. So, you had been retained as a testifying expert, but the settlement obviated the need for you to submit your report?

A. That's my understanding, yes.

Q. On whose behalf were you retained?
A. On behalf of 3M.
Q. And what was the nature of the lawsuit?
A. It concerned -- I'm actually -- I'm not sure that I'm allowed to speak about the details at this point.
Q. Well, so I'm -- just to be clear, I'm not asking you about the terms of any confidential settlement. I'm just asking -- well, first of all, was it a class action?
A. No, it was not.
Q. Was it an individual sued 3M?
A. No.
Q. Okay.
A. It -- okay.
Q. Was 3M the Plaintiff or the Defendant?
A. The Defendant.
Q. Okay. And who was the Plaintiff?
A. Meda Pharmaceutical, M-e-d-a.
Q. And do you know where that lawsuit was brought before it was ultimately settled?
A. It was in the U.S., but I don't remember which district.
Q. It was a federal district?

A. I don't remember. I believe so. I don't remember.

Q. Which law firm retained you?

A. That I also can't remember.

Q. Was it any of the law firms in this room, if you recall?

A. It doesn't ring a bell.

Q. Okay. And about how many years ago was that?

A. Seven, eight, something like this.

Q. And how did you come to be retained as an expert in that case?

A. I believe that my name was offered by another economist to an economic consulting firm that was looking for someone with expertise on European markets specifically.

Q. What was the name of that consulting firm?

A. Brattle.

Q. So, it was The Brattle Group?

A. That's right.

Q. Do you have any affiliation with The Brattle Group at this point?

A. No, I did not.

Q. Did you have any formal affiliation with them at the time?

A. No.

Q. And have you ever been a consultant in a litigation?

A. No.

Q. Have you ever given testimony to any regulatory or governmental body in any country?

A. No, I have not.

Q. So, you haven't testified before Congress?

A. No.

Q. Or before a Grand Jury?

A. No.

Q. Or before -- I understand the general subsumes the specific. But just you haven't testified before the FDA or the CDC?

A. No, I have not.

Q. So, since this is your maiden voyage and I am sure you are very well prepared, I just want to go over some basic rules.

You understand that you're testifying under oath?

A. Yes, I do.

Q. Are you taking any medications that could impact your ability to testify truthfully?

A. I am not.

Q. And if I ask you a question that you don't understand, obviously you're free to say, "I don't understand that," and ask me to clarify it.

If you answer the question, the inference will be that you've understood it. Do you understand that?

A. Yes, I do.

Q. We'll be taking a break every hour or so; but if you need a break, please just ask for one. The only thing I would ask is that if a question is pending, that you answer the question before taking a break. Is that all right?

A. I understand.

Q. And you're doing a very good job of this, but we always ask folks to verbalize, articulate their answers rather than gesticulating just because it creates a clearer record.

Is that all right?

A. That's fine. Thank you.

Q. All right. And how did you prepare for

this deposition?

A. I reread my own report and those of the Plaintiff economic experts. I reviewed some other documents with my team at Bates White, and I spent the last couple of days getting advice on how to answer questions here at Kirkland.

Q. And starting with the prep sessions at Kirkland, about how many hours did you meet total with the Kirkland lawyers?

A. About ten hours this week.

Q. Any time before that?

A. Two weeks ago. Probably about the same.

Q. With which lawyers did you meet?

A. With this -- for this week I met with Donna Welch, Tim Knapp. Yesterday there was a bit of participation or -- sorry -- two days ago there was a bit of participation from Zach whose surname I've now forgotten. And Carl Knapp. No, it's Tim Knapp. Carl, starts with a P maybe. No. I should stop guessing.

Q. No worries. Okay. Carl.

A. Two weeks ago it was primarily Maria Rivera.

Q. And was anybody other than those

attorneys meeting -- were anybody other than those attorneys meeting with you during those meetings at Kirkland & Ellis this week and two weeks ago?

A. Some members of my team from Bates White were also present.

Q. Which one?

A. Scott Weishaar, Josh Waizer and not -- not this week, but in the past, Angela Pazzaglia.

Q. And you had mentioned that you separately met with your team at Bates White?

A. That's right.

Q. Was it with those same three individuals?

A. They were present. There were -- there were also several others, in particular the team of people who had been doing a lot of the data work. So, we re-reviewed all of the code and the data sources together to make sure that it was clear to me that my instructions had been followed.

Q. Was it the first time you were seeing any of that data code?

A. Some of it was -- was new to me in that it concerned a lot of the very early stage processing, which I was not integrally involved in

because there was no need for a lot of input from me on some of those data processing decisions. But other -- other output certainly I had seen throughout the last few months.

Q. Did you agree with all the decision-making on the early stage processing?

A. Yes. Wherever there was any -- any opportunity to -- where there was any gray area I should say, the team had a good protocol, so they would always do it two or three ways to make sure that the results were not sensitive to an assumption about how to allocate zip codes to a county, for example.

Q. And who there made the decision about which of the two or three ways or maybe four ways, if there was an approach and then two or three alternatives, was the one that went into the processing?

A. I don't know that I could name one individual who was responsible. They work together in a war room. I think there is -- it's a collaborative process. There is a lot of discussion back and forth about what their experience has been in the past about how best to

handle these kinds of issues.

In some cases also after we received the data from the Plaintiffs, we could see what decisions the Plaintiffs had made and so often we were replicating those and testing sensitivity of those assumptions.

Q. And you mentioned that you reviewed, in addition to your own report, the Plaintiffs' economic experts. By that did you mean the same ones that you mentioned in your report?

A. Yes. So, specifically the report of Professor Rosenthal, the report of Professor Cutler, the two reports of Professor McGuire and the report of Professor Gruber.

Q. Any other materials you reviewed in preparation?

A. Let's see. I think I briefly skimmed some of the DEA expert reports but very, very rapidly, the deposition testimony of the economic experts. It's possible that I looked at other documents, but I can't remember them as I sit here now.

Q. Sure. And the DEA expert reports that you reviewed, were those ones that you had

previously looked at?

A. Yes. They would be in the "Materials Considered" list.

Q. Have you submitted an invoice for your work in May of this year?

A. No, I have not.

Q. Have you prepared an invoice for that work?

A. Not yet, no.

Q. Can you tell me about how many hours you worked in May?

A. My guess would be around 80.

Q. And in June?

A. Around 15.

Q. So -- okay. And when were you retained in this matter?

A. In May 2018.

Q. How did you come to be retained?

A. Initially I was contacted by someone at Bates White asking me if I was interested in acting as an expert witness, confirming that I had no potential conflicts. Then at the time I was teaching a course at Northwestern here in Chicago or outside Chicago. So, I was asked to meet with

some lawyers at Kirkland; and several weeks after that, they asked if I was willing to do this.

Q. Who was the individual at Bates White?

A. Scott Weishaar.

Q. What is his title or role at Bates White?

A. I believe he is a partner at Bates White.

Q. Did you know him previous to his reaching out to you?

A. We had met I believe at a life sciences symposium that Bates White runs every year, and I know many other economists at Bates White.

Q. That was in 2017?

A. When we first met?

Q. Yes.

A. It could have been 2016. It could have been 2017.

Q. And you mentioned you know a number of the economists at Bates White. In what capacity do you know them?

A. In some cases they were in academia before moving to Bates White. So, academia is a small world. At least academic -- the world of

academic economists is fairly small. So, I had met them in their prior lives.

In other cases, again, even though they are not academics, they often participate in a lot of academic conferences. So, for example, they would organize a panel to discuss a pressing policy issue, and so I had met them in these kinds of -- these kinds of fora.

Q. It's funny that you say the world of academic economists is very small. I feel like everybody majors in economics and the world of academic economics is quite large.

Do you have sort of a subfield of academic economics that you were thinking of or that you consider yourself to be part of?

A. Well, there is a lot of undergraduate majors. There is not that many Ph.D.s.

So, particularly in the world of people who do work on the economics of pharmaceutical markets, there are not that many of us. I suspect it was probably difficult to find enough experts for this case because there are quite a few Defendants.

More generally, I also work on

intellectual property and innovation. That also is a relatively small community of people. I work on competition issues. So, there are different -- different little worlds, some of which overlap, in which I participate.

Q. And would you agree that your sort of essential expertise is in innovation, productivity and competition?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. Those are among my areas of expertise. I consider myself specifically an expert on pharmaceutical markets, including innovation, but also behavior on the product market.

BY MS. GEMAN:

Q. Behavior on the product market?

A. Yes. So, as opposed to the process of research and development, I have also examined in a number of different papers their competitive behavior once a product has completed its R & D development process and received regulatory approval.

Q. And that would be in the category of competition?

A. Competition, yes. Health policy, regulation of pharmaceuticals. These are all areas that my research touches on.

Q. Do you consider yourself an expert in the regulation of pharmaceuticals?

A. In certain aspects of the regulation of pharmaceuticals, yes. So, I would not describe myself as an expert on the details of compliance, but this is a highly regulated industry, so it's impossible to be an expert in it without having a pretty good understanding of the regulations that the industry faces.

Q. Which aspects of pharmaceutical regulation do you consider yourself an expert in?

A. The process of receiving regulatory approval or marketing authorization. In Europe there are a lot of other sort of specific issues. So, the process of negotiating price and reimbursement with different governments and their health technology assessments, for example, their compliance with laws regarding removement of goods in Europe. That's a big issue, and it might start to become one here in the U.S. as well.

Negotiating with payors in general.

It's -- that's not necessarily highly regulated, but there are certainly some aspects of it that it's important to pay attention to what the law is.

Q. Do you consider yourself an expert in the marketing and branding of pharmaceuticals in the U.S.?

A. I have written papers on the marketing and branding of pharmaceuticals in the U.S. So, I would not be an expert in -- for example, I would never advise a drug firm on how to come up with a sexy product name or brand name or what kind of content works best in a direct-to-consumer advertisement.

I am not that kind of marketing expert, but I have done a lot of work to understand how detailing affects outcomes in the U.S. in particular and other kinds of communication with -- with the physician and consumer community.

Q. And those -- or the fruits of that research are reflected in your CV, is that correct?

A. Yes, it is.

Q. So, we will get to that in a minute.

And are you presently affiliated with any -- strike that.

Are you -- do you have any formal affiliation with Bates White?

A. No, I do not.

Q. Do you receive any income from Bates White?

A. No, I do not.

Q. So, you don't have any sort of share of their billings in this matter?

A. No.

Q. Do you have any formal affiliation with any sort of litigation consulting group?

A. No, I do not.

Q. What is the Analysis Group?

A. It is another economic consulting group.

Q. Do you have an affiliation with that group?

A. I believe I'm listed as one of their academic experts, but I have never received money from the Analysis Group. I have not worked on a case with them or they have never supported me on a case.

Q. So, you understand you are listed as an affiliated expert with the Analysis Group?

A. Yes.

Q. Okay. How did you come to be an affiliated expert with the Analysis Group?

A. Again, it's a fairly small community of academic economists with expertise in some areas. The Analysis Group and another consulting firm called Cornerstone recently opened offices in Europe and were particularly keen to connect with academics working in Europe.

So, both of them have contacted me about interest in future cases. I have not worked with either one of them on any specific case.

Q. And are you presently an expert in any litigation other than this one for which you have, to your knowledge, not yet been disclosed?

A. No, I am not.

Q. So, you're not working on any litigation other than this one?

A. That's correct.

Q. Do you advertise for expert services?

A. No, I do not.

Q. And do you know if you've gotten any sort of intakes or calls as a result of your appearing on the Analysis Group's page as an affiliated expert?

A. I have never been contacted directly by someone seeking expert services. I've been contacted by the Analysis Group and others occasionally when a case comes up where they think my expertise might be pertinent.

In the last few months, I've explained that I was occupied with this case and therefore was not interested in becoming an expert for anything else.

Q. And who retained you?

A. Allergan.

Q. And do all your opinions in this matter relate to your work for Allergan?

MS. WELCH: Objection to form.

BY MS. GEMAN:

Q. I can reask the question.

Allergan was the entity that formally retained you. Do you consider yourself to be working only on behalf of Allergan or Allergan plus other marketers?

A. I consider myself providing expertise on -- for a set of assignment questions that came from Allergan.

Q. Do you see yourself providing expertise

for any pharmaceutical company other than Allergan?

A. In this case?

Q. Yes.

A. No.

Q. In any other case?

A. No. I'm not retained in any other case. But if you ask me have I had conversations with pharmaceutical firms about, for example, dealing with HTAs in Europe, then I have had informal conversations about that.

But I am not -- I have not been retained as a consultant in any formal relationship, and I'm not compensated for any of those conversations.

Q. With which companies have you had these formal -- I'm sorry -- informal conversations?

A. So, for example, Pfizer. That's the one that springs to mind.

Q. And you've been given some grants from Pfizer, is that correct?

A. I have received some grants from Pfizer in the past, yes.

Q. About how much money total in grants from Pfizer?

A. Pfizer funded a project that I shared

with Pierre Dubois at the University of Toulouse several years ago. I believe the money went to Toulouse, and Pierre and I benefited from that indirectly.

Pfizer is also a sponsor of a chair at MINES ParisTech. It's one of five sponsors of that chair. And so that does not fund specific papers. It funds a body or generally academic work looking at particularly the effect of changes in trade policy and intellectual property on access to drugs. And that's about 50,000 euros per year.

Q. So, is that about $62,000?

A. It's a little less than that.

Q. A little less than that. Okay. Can you tell me how much that is?

A. I don't remember what the exchange rate is right now.

Q. I think it's 1.13. Does that sound about right?

A. Something like that.

Q. All right. And how many euros or dollars did Pfizer give to the grant that you mentioned previously?

A. At Toulouse, I believe it was 50,000

also.

Q. And is your contact at Kirkland & Ellis generally Donna Welch?

A. I don't have a lot of contact with Kirkland & Ellis directly. The only thing -- the only direct contact is submitting my invoices through Kirkland & Ellis because they understand how to use the system and I don't.

Q. Fair enough. Have you had any dealings with Kirkland & Ellis previous to this case?

A. No.

Q. Had you had any dealings with -- well, we can go one by one -- O'Melveny & Myers previous to this case?

A. I'm sorry. Is that a law firm?

Q. It is.

A. No, I have not.

Q. Okay. What about Jones Day?

A. Not to my recollection, no.

Q. What about Covington Burling?

A. No.

Q. What about -- not going to leave you out. What about Dechert?

A. Not to my knowledge. But I should --

can I add a caveat here?

Q. Of course. You can always add a caveat.

A. When Cornerstone and Analysis Group opened their offices in Europe, they asked me to essentially accompany them on visits to various law firms to explain their services as economic consultants, and so we visited several law firms. I'm not very good with names. So, I just don't remember which -- which firms I visited.

So, it had nothing to do with this case. There was never any kind of formal arrangement. It was just a discussion about current issues in competition policy.

Q. And were you paid for that work?

A. No, I was not.

Q. Were you hoping that you would be considered for future expert or consulting work in connection with having made those relationships?

A. That was one reason to be included, yes.

Q. With whom at Cornerstone and/or Analysis did you make these visits?

A. I won't remember the entire set of people who accompanied me on these visits. My primary contact at Cornerstone is one of my former

professors named Peter Davis, and the primary contact at Analysis Group was -- let's see -- Pierre Cremieux, C-r-e-m-i-e-u-x.

Q. Were there other academic experts who accompanied you on those visits?

A. No, not on those visits, no.

Q. Have you done other work for Cornerstone and Analysis Group in Europe?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. Let's see. I have been asked to, for example, act as a member of a panel to discuss competition issues that come up in the pharmaceutical industry. Some of those panels are organized or sponsored by consulting firms, and so I'm not paid for that.

But it's, again, an opportunity to meet lawyers, to discuss with people who are working in this area, to -- for me it's interesting to learn about what they find to be interesting issues and challenges in this space.

BY MS. GEMAN:

Q. Have you interacted with any consulting group other than Bates White in connection with

your work on this case?

A. No, I have not.

Q. And have you interacted with any of the Defendants' other experts in your work on this case?

A. I have not had any substantive discussions with the other Defendants, no.

Q. Have you spoken with any of them in the period of May 2018 to the present? And I'm not asking you to do a memory test. I'm going to give you what's been marked as Exhibit 2, which is "Defense Experts Disclosed on May 10, 2019."

(WHEREUPON, Allergan-Kyle Deposition Exhibit No. 2 was marked for identification: Document, "Defense Experts Disclosed on May 10, 2019.")

BY MS. GEMAN:

Q. If you could, just take a minute to look at that document.

Have you seen that document before?

A. No, I have not.

Q. Okay. Margaret, which of these individuals, other than yourself, do you know

personally?

A. Okay. Do I know personally.

Craig Garthwaite, Henry Grabowski, Iain Cockburn, Sean Nicholson.

That's the set I know personally.

Q. And how do you know those individuals?

A. So, again, it's a small world of academic economists working in this space.

But, more specifically, Craig Garthwaite is a professor at the Kellogg School, Northwestern University, and he runs the health management program there. I might be getting the title of their program wrong. But he runs a program within the MBA program specific to the healthcare sector. And, so, in the past I have acted as a visiting professor there, so I know him because I offer a course in that program.

Henry Grabowski was a colleague of mine when I was at Duke University. I was there between 2004 and 2006. And we have a few papers together.

Iain Cockburn is a professor at Boston University. He was there when I was a student at MIT. And we also have a paper together.

Q. And those papers are listed in your CV,

correct?

A. They are, yes.

Sean Nicholson was an editor of a volume in which I have a paper.

And, again, all of these people are colleagues in the more global sense. I see them at conferences on a regular basis.

Q. Did you know before just now that they were or they are experts in this case?

A. My team at Bates White had told me some of these names, but I have not seen the complete list prior to this point.

Q. Had they told you those particular five names, any of those particular five names?

A. Yes, they had.

Q. In what context did Bates White identify other experts in this case?

A. We had a general discussion after all of the expert reports were submitted, and so they identified -- they named these names.

Q. So, during the time you were preparing your report, did you know the identity of any of the other defense experts?

A. I did not know any other defense experts

while I was preparing the report. None of the economic experts. I knew some of the names of other Allergan experts because there are points where I would refer to what I was told to expect in their reports.

Q. Told by whom?

A. By Bates White primarily or counsel.

Q. Did you receive any written materials that described what the opinions of the other Allergan experts was slated to be?

A. No.

Q. Did you have -- sorry.

How much time did you spend speaking with Bates White about the other Allergan experts' opinions?

A. Less than 15 minutes. I believe it would come up in, for example, a discussion about quantifying untreated pain or figuring out is it possible to develop some clinical guidelines to establish whether a prescription was appropriate or not.

And I understood that, for example, Dr. Warfield said -- suggested there should be no bright lines like that. It was that kind of --

that kind of substance.

Q. Do you have any personal experience or expertise in the development of such clinical guidelines?

A. No.

Q. Do you have any personal experience in attempting to quantify undertreated or untreated pain or, for that matter, any untreated or undertreated condition?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. No, I have no -- I'm not a medical doctor.

BY MS. GEMAN:

Q. But my question is a little bit different. I appreciate your answer.

But have you ever purported to quantify untreated or undertreated medical conditions, including, but not limited to, pain?

A. I have not attempted to quantify that specifically. It's a topic that comes up in my research particularly in developing countries. There's concern about access to treatment.

So -- so, certainly in the past I have

tried to find proxies for undertreated conditions. Those proxies are standard WHO kinds of measures for burden of disease or prevalence.

Q. Are you offering any opinions about the existence or extent of untreated pain in this context?

A. No, I am not.

Q. So, do you have any basis to sort of agree or disagree with Dr. Warfield's -- actually, strike that. Separate question.

Do you have any background or experience that enables you as an expert to agree or disagree with Dr. Warfield's opinions?

A. No.

Q. Did you speak with Steven Lieberman during your preparation of your report?

A. No, I did not.

Q. Jonathan Macey?

A. No, I did not.

Q. Carl Peck?

A. No, I did not.

Q. Carol Warfield?

A. No, I did not.

Q. Subsequent to the completion of your own

report, did you read their expert reports?

A. No.

Q. Have you read any --

A. Actually. Sorry. Of the Allergan reports, I have read Carol Warfield's and the Lieberman report.

Q. What other, if any, expert reports have you read subsequent to the completion of your own report?

A. I don't believe I have read -- subsequent to the completion of my report, I have not read any of the other defense expert reports outside of the two that I just named for Allergan.

Q. And subsequent to the completion of your report, including the appendix on materials considered, have you reviewed any other documents in relation to this case in addition to those two reports?

A. Not that I can recall, no.

Q. And are you relying on the reports of Lieberman and Warfield?

A. No, I'm not. Not explicitly. Again, I cite points that I understood they would be making in a couple of spots in my report. My opinions are

not -- are not really reliant on them, but I point to their expertise in a couple of places.

Q. This is going a little bit out of order. But what assumptions were you given by counsel to use in preparing your report?

A. Can you be a bit more specific?

Q. Sure. So, one piece of information that you didn't know directly or through your own expertise was the two pieces of information you just described in connection with undertreated pain and the clinical guidelines, correct?

A. That's right. And none of my analyses depend on that definition.

Q. What other pieces of information or assumptions were you given by counsel that you used in writing your report?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. So, may I look at some of the text in my report?

BY MS. GEMAN:

Q. Yeah. To be clear, I'm not asking about what documents they gave you. I'm just asking if they gave you any general assumptions on which you

relied in writing your report.

A. The only area where I think that there was a discussion about -- and it wasn't necessarily assumptions, but there was some discussion with counsel, what concerned the timeline of some of these products, so who owned what, because Allergan's corporate history is rather complicated.

Q. And you mention that in a footnote in your report.

A. Yes, yes.

Q. Okay. Have you met any of the Plaintiffs' experts whose work you cite and/or criticize in your own report?

A. Yes, I have.

Q. Which ones?

A. I have never met Professor Rosenthal. I have met Professors Cutler and Gruber and McGuire.

Q. In what context?

A. Professor Gruber was on the faculty at MIT when I was a graduate student there. Professor Cutler was on the faculty at Harvard when I was a student at MIT.

And there is a lot of joint seminars, et cetera, between the two, the two institutions.

They are both affiliates at the National Bureau of Economic Research where I had a desk while I was a graduate student.

Professor McGuire was the editor of the Handbook of Health Economics in which I have a chapter.

Q. Do you consider them all experts in health economics?

A. Yes.

Q. Do you consider them all well respected?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. I think they've all made important contributions in academic work. My report focuses on flaws in their expert reports. But I have great respect for all of the individuals, of course.

BY MS. GEMAN:

Q. Do you consider them well respected in the academic community?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. I can't say what the rest of the profession thinks. I would say their current affiliations probably speak for themselves.

BY MS. GEMAN:

Q. What did they say, those affiliations?

A. Well, they are professors at Harvard and MIT.

Q. You have mentioned a few times that it's sort of a small world. Do you have any opinion as to whether they are considered well-respected academics within that small world that you keep mentioning?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. Certainly I think that David Cutler and Jonathan Gruber are considered very prominent public economists or health economists.

Professors McGuire and Rosenthal work in a slightly different sphere than I do for the most part because they are both at Harvard Medical School I believe and so they publish in health policy journals.

Their concentration of publications is more geared towards health policy rather than economics. So, it's a -- that's a slightly different world. There is some overlap, but it's a slightly different world.

BY MS. GEMAN:

Q. Have you ever published in a health policy journal?

A. Yes, I have.

Q. Okay. Which ones?

A. May I look at my CV --

Q. Sure.

A. -- to remind myself of the names?

Value in Health, Health Affairs, Health Services Research, Globalization and Health, Health Policy and Planning.

And as far as book chapters that are specific to health economics, I have a chapter in the Handbook of Economics of the Biopharmaceutical Industry and another chapter in the handbook of Health Economics Volume 2 and another chapter in the Elsevier Encyclopedia of Health Economics.

Q. I'm sorry. Remind me. Had you -- you said you hadn't met Meredith Rosenthal.

Had you been familiar with her work prior to this case?

A. I can't recall specific citations that I have made to her work. That doesn't mean that there isn't one somewhere in one of the papers here

somewhere. If there is, it would be probably papers from the early 2000s, but...

Q. And regardless of whether you cited her work or felt there was enough overlap in your areas to warrant consider citing her work, have you -- are you generally familiar with her work?

A. Frankly, no.

Q. And what I'm going to show you is what's been marked as Exhibit 3, and it's a list of Plaintiffs' experts that frankly I just put together. It's bespoken. If there is any mistakes on it, it's entirely inadvertent. And let me give your counsel a copy.

(WHEREUPON, Allergan-Kyle Deposition Exhibit No. 3 was marked for identification: List of Plaintiffs' experts.)

BY MS. GEMAN:

Q. And I'm going to assume you have not seen this document before.

A. I have not.

Q. All right. Have you -- other than the individuals you mentioned, namely, Drs. Cutler, Gruber and McGuire, have you met any of these

individuals?

A. Not to my knowledge, no.

Q. And had you heard of -- again, excluding those three and also excluding Dr. Rosenthal of whom we've spoken, had you heard of any of these individuals before this case?

A. I knew of David Kessler, yes.

Q. And what did you know about him?

A. That he was a -- is a former FDA commissioner.

Q. And had you -- have you read his -- or strike that.

Have you ever -- had you ever interacted with Dr. Kessler?

A. No, I've never met Dr. Kessler.

Q. And, to your knowledge, did Bates White have communications with Defendants' experts other than yourself?

A. I believe that they were also providing some support for Mr. Lieberman, Dr. Lieberman.

Q. And what is the source of their knowledge about the scope of other experts' work, if you know?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. I have no idea.

BY MS. GEMAN:

Q. So, when they talked to you about this is what this one is going to say, this is what that one is going to say, do you know how they got their information?

A. I have no idea.

Q. Were they relying on any notes or drafts, to your knowledge?

A. I have no idea.

Q. And do you know if the personnel at Bates White had communications with the shops that were supporting the other of Defendants' experts?

A. I don't know -- I know that they had some issues in replicating some of the Rosenthal and Cutler analyses. So, I'm sure that there was some exchange with the support teams for those reports in order to understand what was going on with the data. But as far as I know, that's the extent of it.

Q. And did you see any of those communications?

A. No, I did not.

Q. And was the Bates White team located in the U.S.?

A. Yes, they're located in Washington.

Q. Now, earlier in this deposition you mentioned I think at least three people you worked with at Bates White: Angela Pazzaglia, Scott Weishaar. Is that how you pronounce it?

A. He is going to laugh because I've been trying to ensure that I have the correct pronunciation of everyone's name and I am sure that I'll guess wrong.

I believe it's Weishaar.

Q. Oh, Weishaar. And Josh Waizer?

A. I think it's Waizer.

Q. Waizer. Other than those three, who were the other team members at Bates White with whom you worked on this report?

A. I'm not sure that I can provide an exhaustive list because, frankly, it was -- it was a large team and I'm bad with -- frankly, I'm bad with names.

Q. That's understandable.

A. So I can provide a few of them.

Q. Sure.

A. But I'm sure it's not exhaustive.

Dave Lorenz. Lauren. I can't remember her surname.

Q. Trusheim?

A. It's possible.

Q. Okay.

A. Tom.

Q. Thomas Levin?

A. It's possible. Sorry. I consider myself lucky if I can match the first name to the face most of the time.

There was a Gabe on the team.

Q. Okay. So, you mentioned before that Scott is a partner, is that right, to your knowledge?

A. That's my understanding.

Q. Does he have a Ph.D.?

A. No, he does not.

Q. Do you know what his highest degree is?

A. I'm not sure.

Q. And Josh Waizer, do you know what his degree is?

A. I believe it's a Bachelor's, but I -- he might have a Master's. I don't know.

Q. In economics?
A. I don't know.
Q. What about Angela Pazzaglia?
A. Angela does have a Ph.D.
Q. In what field?
A. It is not economics. It's something in the hard sciences, the real sciences. But I don't remember specifically.
Q. And Grant Hou, was he a member of your team or she?
A. I'm not remembering a face to match to that. But, again, that doesn't -- that doesn't mean that he or she wasn't working on the team.
Q. David Lorenz?
A. Yes.
Q. He has a Ph.D.?
A. He was on the team. I don't think he has a Ph.D.
Q. Do you know what his area is?
A. No.
Q. Michael Brown?
A. I don't know.
Q. Gabe Fernandez?
A. I don't know. I don't -- to my

knowledge, those names are probably the more junior people on the team and it's unlikely that they have Ph.D.s. But I can't say that for certain.

Q. All right. And I guess what I'm asking for each of those folks is if you know what degree they do have even if it's not a Ph.D., like do they have a Bachelor's or Master's?

A. I never asked for their CVs or had a discussion about our educational backgrounds.

Q. And what about Lauren?

A. Same. I don't know.

Q. Thomas?

A. I do not know.

Q. Who was Rachel Piemonte?

A. I don't know.

Q. Who was Samuel Sherman?

A. Again, I remember that he helped me with my iPad at some point, but I don't know exactly what his -- what his degrees are in.

Q. Therefore, he was the most valuable one, right?

All right. And have you seen the invoices of Bates White?

A. No, I have not.

Q. All right. So, what I'm going to introduce now is what was produced by your counsel last night as your invoices and that's Exhibit 4.

(WHEREUPON, Allergan-Kyle Deposition Exhibit No. 4 was marked for identification: Four invoices.)

BY MS. GEMAN:

Q. Do you recognize what's been marked as Exhibit 4?

A. Yes.

Q. And are these the invoices you gave directly to Kirkland?

A. Yes.

Q. And you mentioned earlier that you had not yet prepared and submitted invoices for April and June. I'm sorry. I beg your pardon. For May and June.

A. That's correct.

Q. And that the -- and that the hours between May and June were about 95, is that right?

A. That's my best guess.

Q. Sure. And before that you worked about 110 hours. Does that sound about right?

A. That's probably ballpark although I

could sit here and add it up now if you like.

Q. No. It's not a good use of your time. It's okay. But let me know if you think these invoices are accurate.

A. Yes, they're -- that's why they're invoices.

Q. All right. And your rate is 650 euros per hour?

A. Yes.

Q. And that's about more than $700, about $730?

A. Again, I -- we can use an iPhone to do the conversion, but I haven't done it this week.

Q. Let's get Samuel Sherman.

How did you come to your rate?

A. Through discussions with other colleagues who had acted as expert witnesses in the past.

Q. Do you use a different rate for, for example, travel or depositions?

A. No.

Q. Do you have a day rate?

A. No.

Q. Do you have a trial rate?

A. No.

Q. We would ask that in advance of trial you please supplement this production of invoices.

By the way, are you aware there is a trial in this case?

A. Yes.

Q. Okay. When is it?

A. I believe it's scheduled for October.

Q. Are you planning to attend?

A. I leave that up to counsel.

Q. Okay. And same answer for whether you're planning to testify?

A. Yes.

Q. And have you prepared any demonstratives for trial?

A. No.

Q. Do you know if Bates White has?

A. No. No, I do not know.

Q. And have you ever done any work for Allergan or its predecessors or affiliates before this case?

A. No.

Q. Do you own stock in Allergan in your own name?

A. If I do, it's through an index fund. So, I have no idea.

Q. Right. No, I'm asking about in your own name.

A. No.

Q. May I ask if you're married or partnered?

A. I am married.

Q. Okay. Does your spouse or partner own or does your spouse, I guess, own stock in Allergan?

A. Again, not in his name, certainly.

Q. Do you or your husband own stock in your own names in any pharma company that you're aware of?

A. No.

Q. Okay. So, what I'm going to show you as Allergan Exhibit 5 are "Bates White invoiced transactions for work performed at the direction of Professor Margaret Kyle."

(WHEREUPON, Allergan-Kyle Deposition Exhibit No. 5 was marked for identification: Spreadsheet, "Bates White invoiced transactions

for work performed at the direction of Professor Margaret Kyle.")

BY MS. GEMAN:

Q. Have you seen that document before?

A. No.

Q. All right. Do you have any knowledge about how Bates White invoiced Kirkland & Ellis?

A. No.

Q. Okay.

MS. GEMAN: So, I guess, Counsel, we can talk about this off the record, but we would -- and we appreciate the Excel that you sent this morning. I assume this -- Bates White didn't just hand you guys the Excel, that they had actual invoices. And so we would just -- they just handed you this Excel?

MS. WELCH: We should talk about it off the record.

MS. GEMAN: Sure. Just for the point on the record, we -- we would request actual invoices and if you represent that there are none, then there are none, but...

BY MS. GEMAN:

Q. And do you have a sense of how many

hours Bates White worked on this project?

A. No, I do not.

Q. Would it surprise you to hear it's more than 1,400?

A. No. They did a tremendous amount of data processing at the beginning in particular. They have been a great support team, and I'm sure it took a lot of time.

Q. And did some combination of those personnel write your report or portions of it?

A. They participated at some points in the drafting of the report, but the report -- that's -- it's my report.

Q. But you didn't literally write every word of your report?

A. I did not myself write every single word of the report. I -- but I directed everything that was in the report.

Q. Are there any sections you wrote yourself?

A. I can give you a list of sections where I think there was -- there was limited input from others. So, Section 1.A on my qualifications, Section II.A on the economics of pharmaceutical

promotion.

And to be honest, I suspect that I had the first draft of the summary of opinions, but that the -- it was an iterative process working through what's the best order in which to present these, these opinions, how best to phrase certain points.

Again, this was my first expert report, so I certainly relied on a team that had experience writing these reports in the past to help me understand the appropriate structure to adapt the language to the audience for a court rather than for a set of academic economists.

They helped a lot with basic things like formatting because I hate Microsoft Word. So, I was happy to have them do all the work on the footnotes, et cetera.

Q. But they did much more than the footnotes, right? They actually wrote certain sections or at least their billing identifies the sections that they wrote?

A. So, just as an example, they certainly did the charts, and with the charts they would often draft language describing what's in the

charts. And then I would take over, and we would have an iterative process going back and forth about how best to present -- how best to describe the chart and make the points that we -- that I wanted to make.

Certainly, there were times where we would have a discussion, talk about the broad outlines of the report, and I would say can you -- can the team start working on the language for this section following a discussion about its content. Yes.

Q. So, to the extent that there's entries that from the Bates White personnel about drafting sections of your report, you have no high level reason to think they're inaccurate?

A. No.

Q. Do you feel the next time you do an expert report you'll be well positioned to write more of it yourself?

MS. WELCH: Objection to form, mischaracterizes.

BY MS. GEMAN:

Q. I'm sorry. When your counsel objects, she's not instructing you not to answer.

A. Actually, my experience from this suggests that -- I'll give you -- I'll give you some economic speak.

Q. Okay.

A. There is an optimal division of labor. So, I was very happy that the team at Bates White was willing to take on the data processing, as an example. So that's work that way back in the day, particularly when I was a graduate student, I did a lot of that work. For many of my academic papers, I've done a lot of that work.

I was happy that there was a team that could -- that I could trust to do that work for me and not bill at my rates and not allocate all of my time to writing this expert report and in particular handling tasks like that as important inputs into the report.

And I would say, you know, again, in terms of I was very happy to have a discussion about the content of each section that is in the report, but to have somebody else do an additional draft of the language, I thought that was an optimal division of labor. It was still my work. They did this at my direction. These are my

opinions.

But just as I work on academic papers with co-authors, it's a collaborative process. Even if my name is on an academic paper, I don't claim that I have written -- that I was the source of every single word in the document.

Q. Do you consider them co-authors of your report?

A. No. I consider that the support team that worked at my direction.

Q. And do you feel -- and keeping in mind I was asking about the writing versus the, you know, data work.

Do you feel that this experience would make you better able to write your own report the next time you do an expert report?

MS. WELCH: Objection to form, mischaracterizes her testimony.

BY THE WITNESS:

A. I feel that the next time I write an expert report, having written one already, I will have a better sense of how a report should be structured, the order in which things should be presented, the kinds of arguments that should be

made, the kind of exhibits that would be included.

So, I expect, yes, it will be easier the next time I wrote an expert report, if I write -- if I do.

BY MS. GEMAN:

Q. And would you like to do future expert reports?

A. I found it a very interesting process. I would say it probably depends on the case and specific circumstances.

Q. And do you think you would plan to actually write, literally write more of the report yourself the next time or?

MS. WELCH: Objection to form, mischaracterizes her testimony.

BY THE WITNESS:

A. As I said, every word in this report is something that I have been through over and over again. I change language in some cases that was initially drafted by members of my team. They would occasionally suggest changes to some of the language that I first drafted. I view that as work product. That's how we exchanged -- we exchanged information, and that's how the report evolved.

For me it's hard to say -- it's more than 100 pages long. It went through many, many drafts. I can't say how much of this report -- how many of the words were first written by me in the word processor, that doesn't really have any meaning to me here.

BY MS. GEMAN:

Q. Okay. I would like to introduce your report as Exhibit 6, please.

(WHEREUPON, Allergan-Kyle Deposition Exhibit No. 6 was marked for identification: Expert Report of Professor Margaret K. Kyle, May 10, 2019.)

MS. GEMAN: We have been going about an hour. Is this a good time for you for a quick break?

THE WITNESS: Yes.

MS. GEMAN: Is that okay with you?

MS. WELCH: That's fine.

THE VIDEOGRAPHER: We are off the record at 10:16 a.m.

(WHEREUPON, a recess was had from 10:16 to 10:31 a.m.)

THE VIDEOGRAPHER: We are back on the record

at 10:31 a.m.

BY MS. GEMAN:

Q. Margaret, I just wanted to circle back to your visits to the law firms in Paris that you were --

A. I didn't actually visit any law firms in Paris.

Q. Oh. So, when you testified earlier about meeting with law firms and that you were with a group that included certain personnel from consulting organizations that had recently opened offices in Paris, to what were you referring?

A. Actually, they've opened offices in Europe and more specifically London and Brussels. Analysis Group does have a small team now in Paris. But the meetings with lawyers took place in London and in Brussels.

Q. So, you actually traveled to attend those meetings?

A. Yes.

Q. How many did you attend?

A. How many meetings with lawyers?

Q. Yes.

A. Between six and eight I would guess.

Q. Was it all the same trip, London and then Brussels or Brussels and then London, or was it two separate trips?

A. In the case of Cornerstone, it was all one trip over two days.

Q. In London?

A. No, there are direct train connections between London and Brussels. So, I went to London. There was a day in London and then the next morning we went to Brussels.

Q. I see.

A. And with Analysis Group, I believe for that I was just in London. I know they were going to Brussels the next day, but I couldn't fit it into my schedule.

Q. Did you visit the same law firms with Analysis Group that you had visited with Cornerstone?

A. I think there was at least one that -- that was in common. But, again, I'm not very good with names and, frankly, all of the law offices start to look the same.

Q. Did you have to take time off from work to do these trips?

A. Well, I'm an academic, so I don't have set hours for the most part. It was a term when I had no teaching obligations, so I was obviously not in my office during those two days.

Q. Which semester was this?

A. I don't remember.

Q. Sorry. Did you visit these law firms within the last year?

A. Yes, last fall for Analysis Group and the year before for Cornerstone.

Q. So, it was fall of 2018 for Analysis Group that you went to London?

A. Yes. That's to the best of my recollection. I have to check my calendar.

Q. And it was spring 2018 that you went to London and Brussels with Cornerstone?

A. I don't remember the month.

Q. It was -- okay. But it was in early 2018?

A. I believe it was around September or October of 2017.

Q. It was before you got retained in this case?

A. Yes.

Q. And how long was each meeting approximately?
A. One hour.
Q. Who paid for your travel?
A. Cornerstone and Analysis Group.
Q. And have you stayed in touch with any of the individuals with whom you met on those trips to London and Brussels?
A. Do you mean the lawyers at these firms?
Q. Sure.
A. Have I stayed in touch. I am not in regular contact with any of them. I believe I probably received a couple of LinkedIn invitations, and I've crossed paths with some of them at conferences in Brussels and in London on competition policy.
Q. And have you -- have you affirmatively reached out to any of them to sort of check in or say hello?
A. No.
Q. And is it understood that if those law firms reach out to Cornerstone or Analysis that as a result of those meetings that you're the person that Cornerstone or Analysis would reach out to in

turn if you were an appropriate expert for whatever the subject was?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. That's not my understanding. I know that both consulting firms, like all other economic consulting firms, like to cultivate a set of experts because there is often issues of availability or having the appropriate expertise.

So, no, there is no assumption that I have -- that I would be the first at the top of anyone's list.

BY MS. GEMAN:

Q. Well, I guess I can rephrase it, then.

Are you one of the experts that they're cultivating, to use your word?

A. Yes.

Q. And do the law firms that you met with represent pharmaceutical clients?

A. I don't have a list of their clients.

Q. But do you have a general understanding that they represent a lot of pharmaceutical clients?

MS. WELCH: Objection to form, foundation.

BY THE WITNESS:

A. My understanding was that they were interested in having these informal meetings with companies like Cornerstone and Analysis Group in part because they anticipated having some need of expertise on cases involving something related to the pharmaceutical industry.

But I have no idea who their specific clients are, if they are current clients or potential future clients. I just don't have that information.

BY MS. GEMAN:

Q. But it's your general understanding that they were interested in either that they did represent or would represent hopefully in the future pharmaceutical clients?

A. I don't necessarily know that they are pharmaceutical clients, but that they had some interest in understanding or having a discussion about current issues in competition policy related to pharmaceuticals.

Q. Did the names of any pharma companies arise during any of those meetings?

A. Not to my recollection, no.

Q. What -- did you prepare any materials for those meetings like PowerPoints or?

A. Yes. We had a brief presentation talking about excessive pricing and pay for delay, if I recall correctly.

Q. Are you referring to the Hatch-Waxman Act issues?

A. So, that's an American policy.

Q. Sure.

A. There have been pay for delay cases in Europe as well. So, yes, they are similar, although there is no paragraph 4 equivalent in Europe.

Q. And was it your understanding that the law firms represented any generic manufacturers or had an interest in representing generic manufacturers?

MS. WELCH: Objection to form, foundation.

BY THE WITNESS:

A. Again, I did not discuss specific clients or potential clients that these law firms represented.

BY MS. GEMAN:

Q. Do you know if Cornerstone or Analysis

ever visited pharmaceutical companies to discuss the sort of services they can provide or any -- or the same sort of issues you were addressing at the law firms?

MS. WELCH: Objection to form, foundation.

BY THE WITNESS:

A. I don't know with whom either company has met. I know I have been contacted in a couple of cases where they were interacting with law firms about a specific case and we had a discussion about working as a potential expert; and as I said, I explained that I had already been retained in this case and did not want to take on any other work.

BY MS. GEMAN:

Q. Are you going to -- strike that.

So, if you could please turn to Appendix A of your report, which is your curriculum vitae.

And you can take a minute to flip through it if you need to, but I'd like to know if it's complete.

A. So, there is one additional chapter which has -- which is forthcoming which was accepted last week, which is not listed here.

Q. So, you would add to A.4.b?
A. That's right.
Q. What is that chapter?
A. It is forthcoming in an NBER volume on innovation policy and the economy, and I can't remember now the exact title but something about the alignment of innovation policy and social value in pharmaceuticals.
Q. And did you write that pursuant to a grant?
A. No.
Q. Other than that addition, is this complete?
A. There are other sections that one could include, such as prior Ph.D. students or current Ph.D. students. I think it was decided that that wasn't pertinent to this case. So, that's not part of the CV that's included here.
Q. So, did you make this CV for this case?
A. I provided a copy of my CV to the Bates White team, and they put it in this format.
Q. I see. Is your actual CV in English or French?
A. English.

Q. Do you have one in French?
A. I have created one in the past when applying for a French grant, but I don't keep it on my website.
Q. So, do you have a copy of your own CV, the one that you provided to Bates White?
MS. WELCH: Objection to form.
BY THE WITNESS:
A. Do I have a copy with it -- of it with me now?
BY MS. GEMAN:
Q. Yes.
A. No.
Q. Were you asked to bring a copy of it?
A. No.
MS. GEMAN: We would ask for production of that document, please.
BY MS. GEMAN:
Q. Do you have a copy of that on your computer?
A. Yes.
Q. And when you say your website, do you mean your academic website or a Wiki page or something else?

A. Yes. I have both an academic website through the school where I'm employed and a personal website which has essentially the same information.

Q. And what's the address of your personal website?

A. MargaretKyle.net.

Q. And that website has your -- the CV that is the one that you gave to Bates White to --

A. I would have to check on whether I've updated it recently, but it would be approximately the same. There would be no substantive change.

Q. And when was the last time you prepared a CV in French?

A. Probably four years ago, and it was probably an abbreviated CV again because it was for -- it was part of a grant application.

Q. Is there any information that would be on it that isn't on the English one that's on MargaretKyle.net?

A. No.

Q. Any other CVs that you use?

A. No.

Q. And who at Bates White prepared what's

been marked as or what is Appendix A?

A. I don't remember the name of the person who converted the pdf document to Word.

Q. Is that your understanding of all that they did, convert pdf to Word, or were there substantive changes?

A. As I said, the only substantive change is that I think in one of my CVs I usually list Ph.D. students, and I don't see that here because it's -- it didn't seem particularly pertinent.

I noticed one victim of auto-correct at some point, but I think for the most part it looks like it was just an attempt to do copy-paste from pdf into Word.

Q. What is the victim of auto-correct?

A. It is under A.6. So, about three-quarters of the way down the page where I list a project that I did for the Department for International Development. The title was a "Survey on Pharmaceutical Product Diversion," not "Division," "From Low-Income to High-Income Settings."

Q. Any other changes to your CV that you'd like to make other than fixing that and the

addition of the forthcoming NBER book chapter?

A. Sure. The other change, which, again, looks like just a formatting issue, is on page A.6, at the bottom there where the last word is "Case."

I think someone hit a carriage return, which separated Case Western University -- Case Western Reserve University from that case.

Q. Okay. Anything else?

A. That's all I've seen so far.

Q. And in addition to requesting production of your -- of your CV, we would ask that in advance of trial that you produce an updated CV, if there is one.

A. Okay. That's fine.

Q. Thank you. And you received your Bachelor of Science in economics or in another field?

A. Technically the major was called policy analysis.

Q. And did you get a Master's as well as a Ph.D., or was it sort of part of the Ph.D. program?

A. It was part of the Ph.D. program. So, MIT did not grant a separate Master's Degree. One would only have a Master's if one exited the Ph.D.

program without a dissertation.

Q. Who was your adviser?

A. My primary adviser was Scott Stern.

Q. Did you have another one?

A. My committee included Ernie Berndt, Richard Schmalensee and Rebecca Henderson.

Q. And what was your dissertation?

A. It was "Essays on the Economics of Innovation" I believe is the title. Something like that. Three chapters on innovation.

Q. And what specifically did it look at?

A. There were two papers concerning pharmaceuticals, specifically product launch, and one paper on the laser printer industry.

Q. Which products in the pharma industry?

A. It was an examination of the launch of new chemical entities as of 2000, 1999 or 2000, internationally. So, I looked at launch decisions around the world.

Q. What do you mean by "new chemical entities"?

A. I mean that, in general, at least in the economics of pharmaceutical space, we distinguish between new or novel drugs, which are formerly new

chemical entities or now new biologic entities, to distinguish them from new versions of existing products where the molecule has been known and used for a long time and generic products which are approved under a different regulatory mechanisms.

Q. So, which category would like an isomer go in?

A. An isomer which is an isomer of an existing product? That would not be a new chemical entity.

Q. And, so, which -- which new drugs were you looking at?

A. All of the new drugs that had been brought to -- introduced in at least one country between I think my earliest was 1980 and the latest was 1999 or 2000.

Q. So, would that include like SSRIs?

A. Yes, it would include some of the SSRIs.

Q. Did it include any opioids?

A. I don't believe so because I don't think that any of them qualified as new chemical entities, but it's been a long time since I looked at that list of drugs.

Q. Have you ever studied any of the opioids

other than in connection with this report?

A. No, I have not.

MS. WELCH: Objection to form.

BY MS. GEMAN:

Q. And certainly a Ph.D. is plenty of a degree, but do you have any other degrees other than your B.S. and your Ph.D.?

A. No, that's it.

Q. Okay. And you are not a pharmacologist, correct?

A. That is correct.

Q. Or a criminologist?

A. That is correct.

Q. Or an epidemiologist?

A. That is correct.

Q. Do you have any expertise in pain management?

A. No, I do not.

Q. Do you have any education in any of those fields that I just mentioned?

A. No.

Q. And have you taught -- you taught health policy at Duke in 2011 and '12, is that right?

A. I taught a course on pharmaceutical

strategy with two others at Duke in 2011.

Q. Strategy for marketing or?

A. That was certainly a topic that was covered.

Q. Have you taught health economics since that time?

A. I have not done a full semester course on health economics. I do a couple of lectures for a specific set of students at MINES ParisTech where I cover -- I have a unit on innovation policy, and I have another unit on health policy.

Q. So, the innovation policy relates to competition and new drug development in the main, is that right?

A. No. For that specific course, it's innovation policy more generally.

Q. Not limited to pharma?

A. No.

Q. And I'm sorry. The second category you said was?

A. Health economics and health policy.

Q. And what are the subtopics that you teach?

A. I go through, for example, information

asymmetries in health markets and why that leads to regulation of many aspects of health markets.

I go through a lot of examples of how regulatory interventions work and sometimes the unintended consequences of such regulatory interventions.

I obviously do a fair bit on insurance and the differences between single-payor systems and a more American style of system. Different intermediaries, these sorts of things. It's meant to be a broad overview of health economics.

Q. And when you say "information asymmetries," between who and whom or who and who? Who and whom I think.

A. Well, there are many. So, in -- just as one example, as a patient I don't have access to treatments myself. I am not able to buy many treatments myself directly because it's perceived or the concern is that as a patient I don't have sufficient information to know which treatment is most appropriate.

So, for that reason, we have a physician who acts as a gatekeeper who acts as an expert and hopefully acts as a good agent for the patients he

sees.

There are other examples of information asymmetry concerning quality of products or services.

So, a hospital might have private information about the quality of the service it provides relative to a consumer out there in the market and similarly a pharmaceutical firm probably has better information about the quality of its products than a typical consumer would.

And this is why these markets are highly regulated, in order to try to reduce these kind -- the consequences of these information asymmetries.

Q. And have you ever studied the extent to which pharmaceutical marketing impacts patients' own opinions about their own treatment, you know, their likelihood to go to a doctor and say, "Hey, I want some Humira too," or, you know, "Hey, I want this drug too." I'm using those obviously as examples, not as exclusive examples.

MS. WELCH: Objection to form.

BY MS. GEMAN:

Q. Do you understand my question?

A. I have reviewed papers that look at

things like direct-to-consumer advertising and its effect on patient compliance or patients' willingness to go see a doctor. But I have not done such studies myself, no.

Q. Would it be the same answer referring to studies on how advertising to doctors or general advertising even if it's not DTC impacts patients?

A. Patient health outcomes.

Q. Sorry. Not patients -- patients' own desired use of drugs or statements of opinions about their own treatment and so forth.

MS. WELCH: Objection to form.

BY THE WITNESS:

A. No, I don't think I've done any study like that.

BY MS. GEMAN:

Q. Have you studied the relationship between pharma marketing and patients' health outcomes?

A. Only in this report.

Q. Okay. Do you consider that you did study that affirmatively in this report?

A. I consider that I attempted to test the Plaintiffs' allegation that pharmaceutical

marketing led directly to harm as measured by mortality, and I did not find a relationship.

Q. Are you opining that there is no relationship between the pharma marketing and patient harm or are you opining that Plaintiffs failed to find such a link?

A. I am opining that, for example, in Section V.B that I was unable to establish a relationship between Allergan detailing during the relevant time period and mortality at the county level, which for me is the best measure of harm.

Q. What are the other measures of harm that you looked at?

A. That's the one that I had at the county level. So, that's what I looked at.

Q. Did you look at any other measures of harm?

A. No.

Q. Are you opining that Allergan's conduct caused no harm in these counties in Ohio?

A. I'm opining that there is no statistical relationship between the extent of Allergan detailing and mortality in these counties.

Q. But my question was a little bit

different.

Are you opining that Allergan's marketing caused no harm in these two counties in Ohio, Summit and -- how do you pronounce the other one? How are you taught to pronounce it?

A. Cuyahoga. I don't know.

Q. Okay. Fair enough.

Are you aware that Allergan's conduct caused no harm in Summit and Cuyahoga?

A. I'm opining that I could not find a statistical relationship between Allergan marketing and opioid mortality.

Q. I appreciate that answer to a separate question, but I'm asking you a slightly different question, which is: Are you, Margaret Kyle, Dr. Margaret Kyle, opining that there is no connection between Allergan's marketing and harm in -- experienced by Summit and Cuyahoga Counties?

MS. WELCH: Objection to form, asked and answered.

BY THE WITNESS:

A. I'm opining that I could not find a relationship that the Plaintiffs alleged between Allergan detailing and mortality.

BY MS. GEMAN:

Q. So, unless your counsel instructs you not to answer, you have to answer the question that I asked. And the jury I think would be interested in your answer.

So, what I'm asking again is a slightly different question, which is: Are you opining that there is no harm caused by Allergan's conduct in these two counties in Ohio?

MS. WELCH: Objection to form, asked and answered.

BY THE WITNESS:

A. What I've tried to do is test to the best of my ability with the data that I had available the specific allegations -- the causal chain that Plaintiffs have asserted.

And that causal chain starts with marketing, then goes to shipments, then goes to mortality, and the estimates on the effect of mortality that Professor Cutler generates are then used as inputs for all of the other harms.

So, my point is that if I cannot establish the causality between detailing and shipments or mortality, that the rest of the

Plaintiff allegations which hinge on that relationship are not relevant for me to test any further.

BY MS. GEMAN:

Q. Is there a reason why you won't answer my question?

A. Well, because I didn't run a regression of every potential kind of harm in these counties because I didn't have data on those kinds of outcomes.

Again, I'm trying to follow what the Plaintiffs have done, and what I'm saying is that I can't find -- I can't establish the causation that the Plaintiffs have alleged in the case of Allergan.

Q. Do you feel that or do you have any opinions on whether the marketing Defendants in this case caused any harm in these counties in Ohio?

A. I focused only on Allergan. So, I can't say anything about the other marketing Defendants.

Q. Do you have -- you consider yourself agnostic as to whether the behavior of the pharma marketing caused any harm?

A. I did not --

MS. WELCH: Objection to form.

BY THE WITNESS:

A. I did not have data with which to test that specific allegation, and the scope of my assignment was restricted to Allergan.

BY MS. GEMAN:

Q. And have you ever -- I realize I mischaracterized the class you taught at Duke as a health policy class, and you corrected me to explain it was a class in pharmaceutical strategy.

Have you ever taught a course in health economics?

A. So, as I said, at Ecole des Mines, I taught -- I wouldn't call it a full course, but I have done some lectures on health economics.

Q. Have you taught a course on health policy, a full course?

A. No.

Q. And how did you come to be a professor at MINES?

A. MINES ParisTech.

Q. MINES ParisTech.

A. Well, it's a long and complicated story,

but I suppose the shortest answer is that my husband is French.

Q. Is he an academic as well?

A. Yes, he is.

Q. Do you have tenure?

A. Yes.

Q. And how many courses did you teach this academic year?

A. This academic year. I taught one course at the Master's level and the other component of my teaching is not -- not a formal lecture. It's essentially supervision of a group of students.

So, I went to China with them to help them in a study of the pharmaceutical sector in China and supervised the -- their report on that sector afterwards, and now they're doing internships and they have to do sort of small thesis about their internship. And I supervise those theses as well.

Q. And you said you were not teaching in the fall of 2018, correct?

A. I was teaching a course which was compressed into a very short time period, so I was not teaching week to week.

Q. When was the last time you taught an undergraduate course week to week?

A. An undergraduate course. 2003.

Q. And what is your -- how are you compensated at your University?

A. I have a salary as a full professor in economics.

Q. And is it more or less than the approximately 160,000 that you've made so far on this, you know -- billed or will be earning on work on this case?

A. I haven't calculated what the after-tax net will be from this case. Tax rates there are rather high.

Q. Yes.

A. I'm guessing that it will probably end up being about the same. Post-tax in both cases.

Q. So, it's fair to say that at least for the last couple years, about half your income is from this work for Allergan and half is from your work as a tenured faculty member?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. So, I have received income from other

sources. So, for example, at Ecole des Mines there are chairs that are sponsored by various parties. And depending on work, either supervision of Ph.D. students or research, I can receive honoraria from those chairs. That's been some income over the last few years.

BY MS. GEMAN:

Q. Okay. And how much does that move the needle in the 50/50 ratio?

A. That total can be between 20 and 40,000 euros pre-tax.

Yes. So there are random other sources of income that come up, for example, doing referee reports. Occasionally when I speak at a conference I receive an honorarium. These kinds of -- these kinds of sources of income as well.

Q. So, what is your estimate about income from this work for Allergan and then income from all those other three sources combined, your salary, your -- the miscellaneous additional work through the University and then other honoraria?

A. Again, I haven't figured out the post-tax implications of all of it. My guess is for 2019, which is the bulk of the invoicing for

this case, it will end up being something around -- the Allergan work will end up being around one-third.

Q. And you've taught at Kellogg since 2014?

A. Yes. With the exception of this year because I was working on this case. So, I elected not to teach this term.

Q. And do you typically teach one class per year at Kellogg?

A. Yes, that's right.

Q. When? Which, summer semester, fall semester? Which?

A. I can't remember if they call it spring or summer. I think it's called the spring semester. Spring in Chicago is always difficult to pin down.

Q. Yeah.

A. But it's -- it usually takes place in April and May.

Q. So it's over two months?

A. It's a five-week course.

Q. I see. For which population of students?

A. MBA students.

Q. Okay. And what's the course that you teach?

A. Pharmaceutical Strategy.

Q. Do your students sort of go on to work in pharma companies or hedge funds that invest in pharma companies or do you have any sense of what happens to these students?

A. There is usually between 60 and 80 students. So, I have no idea what happens to all of them. I should say a couple of them usually come from some other non-MBA program, so they are getting a Master's in biotechnology but want to understand something about the market and their career outcomes similarly are quite varied.

Q. Got it. And I would ask you please to turn to your publications in refereed publications which is Section A.4.a, as well as your book chapters, A.4.b, which we have modified to include the NBER forthcoming document, I guess as well as A.4.c and A.4.d, which are your working papers and work in progress.

Do you see these few pages of your CV?

A. Yes, I do.

Q. Okay. And what do you mean by "working

paper"? I know that's not your phrase, but what does it mean?

A. It means that there is a draft of the paper that can be circulated, presented at conferences, presented in seminars, but that has not yet been accepted for publication.

Q. Okay. And it's sort of in the course of being?

A. That's right.

Q. All right. And work in progress is a paper that hasn't even -- or that's not yet at the point where you want to circulate it?

A. That's correct.

Q. Okay. So, you are working on these sort of five papers at once in A.4.d?

A. Yes.

Q. So, looking at these -- looking at A.4 generally, which is the "Research" section, which of these papers do you consider to directly pertain to issues in this case?

MS. WELCH: Objection; form.

BY THE WITNESS:

A. I would say the two that are most directly relevant concern marketing of prescription

drugs in the U.S. So, one is in the Journal of Law and Economics. That's at the top of page A-2.

BY MS. GEMAN:

Q. "Deregulating Direct-to-Consumer Marketing of Prescription Drugs: Effects on Prescription and Over-the-Counter Sales"?

A. That's right.

Q. Okay.

A. And the other is a book chapter, so this is close to the bottom of page A-3, and that one is titled "The Long Shadow of Patent Expiration: Do Prescription to OTC Switches Provide an Afterlife?"

Q. And how is that paper or book chapter -- excuse me -- relevant to the issues in this case?

A. So, both the paper in the Journal of Law and Economics and this book chapter use data which is similar to that employed by Professor Rosenthal in her expert report in that they're -- they're using data from what was once known as IMS, which is now known as IQVIA Health, on prescription sales and marketing.

Q. But other than using -- I mean, that data source is used for many, many, many purposes, right?

A. The marketing in particular is less widely employed, but the -- there are some similarities between the regression specification in those papers and in Professor Rosenthal's report.

Q. What are those similarities?

I want to use the word you used. Right.

What are those similarities between the regression specifications that you were referring to?

A. In that marketing is an independent variable explaining an outcome, a market outcome. So, in the papers that I co-authored, the market outcome was market share of individual products involved. In Professor Rosenthal's report, the market outcome is total MMEs at the national level.

Q. And you used a hedonic regression to study this in your paper?

A. No, there is not a hedonic regression.

Q. Is there a multiple regression?

A. Yes, there is.

Q. Can you explain the difference?

A. A hedonic regression usually refers specifically to explaining price. So, the

dependent variable would be the price of a product, and the explanatory variables or the independent variables would be characteristics of the product, so things like the number of side effects or the number of adverse interactions or its branded status, these kinds of -- these kinds of variables that we think would influence its final price.

Q. Any other similarities?

A. Other than, again, it's looking at what is the effect of marketing on an outcome, that seems like the most direct similarity.

In my other papers I'm often looking for causal effects, and so there are issues of dealing with endogeneity and appropriate units of measurement, et cetera.

So, there is still relevance in my other work, but those are the -- those are the two that I think have the closest relationship with the Plaintiff reports.

Q. And --

A. With the Rosenthal report.

Q. And in the deregulating direct-to-consumer marketing paper, what sort of regression were you employing, if any?

A. Yes. So, there is a regression. And to refresh my memory, if you have a copy of the paper, I can make sure that I speak accurately about the specification.

Q. I may, but if I do, I don't have copies of it. So, I don't think we can introduce it as an exhibit.

Just for purpose of refreshing your recollection, I will show you, per your request, I will show you "Deregulating Direct-to-consumer Market of Prescription Drugs: Effects on Prescription and Over-the-counter Product Sales," Journal of Law and Economics, October 2002, by the University of Chicago.

A. Okay. So, the regression specification that we used in that paper was the log of the market share on the over-the-counter side of the market as a function of order of entry and over-the-counter advertising, and the over-the-counter advertising -- well -- yeah. Both over-the-counter advertising as well as prescription advertising.

Q. What --

A. And --

Q. Go ahead.

A. And the way that advertising enters that regression is as a stock that depreciates over time.

Q. What do you mean by "order of entry"?

A. Oh. I mean this regression is at the product level. So, it's the national market. But there is one observation for each time period for each of the anti-ulcer products that we studied here.

And each of those products entered in a specific order. So, the first to the market would be order of entry 1. The fourth entrant was order of entry 4.

Q. And why did you use the log of the market share?

A. That's a standard transformation in economics, in econometrics.

Q. Thank you.

And have you ever published on stationarity as distinct from testing for stationarity?

A. No, I have never written a paper that focuses specifically on stationarity.

Q. What about time series?
A. No.
Q. And are you aware that you have a You Tube video?
A. No.
Q. Okay. I guess you gave comments to the WIPO?
A. I gave a seminar at the WIPO, yes.
Q. Right. And there is a video I guess of about a seven-minute presentation.
A. Okay.
Q. You should watch it.
And are you -- and in that I guess those remarks -- well, let me ask you this. What is the WIPO?
A. The World Intellectual Property Organization.
Q. Are you -- is it something where there is member states?
A. It is -- yes.
Q. Who have signed --
A. It's an international organization.
Q. Member states are those who have agreed to certain treaties and so forth?

A. That's right.

Q. Okay. And have you given presentations or the WIPO?

A. I presented a research paper at their invitation.

Q. Okay. And that's listed in here?

A. Yes.

Q. And when would you say you first learned of the opioid crisis in the U.S.?

A. I don't have a specific date in mind or even a vague date in mind.

Q. Is it something that before you were retained in this case you were sort of following as a citizen, you know, or as a consumer as opposed to as an economics expert?

A. So, certainly I had read articles in the popular press covering the opioid deaths. I was interested in it a little bit as an academic because I have a project ongoing on overuse of antibiotics, and so I was a little bit curious about whether there were commonalities there.

Q. Are there?

A. I haven't established yet.

Q. What is the product -- I'm sorry.

Strike that.

What is the project you were working on in connection with the overuse of antibiotics or if you want to just point me to where in your CV it's reflected.

A. Sure. There is a research contract from -- it's a grant from the equivalent of the NSF in France.

Q. Is that CNRS?

A. No. It is the ANR and so the project is on the "Economics of Antibiotics."

Q. Can you point me to the page you're looking at.

A. Sure. Page A-8.

Q. Oh, it's this first one.

A. Yes.

Q. Oh, ANR. And that is not CNRS?

A. That's right.

Q. So, this is not -- is this state-funded research?

A. Yes, it is.

Q. I see. And are you looking in that project at the role of pharmaceutical marketing in the prescription of antibiotics?

A. Unfortunately, we don't have data on pharmaceutical marketing in the countries that we're focusing on, which are European.

Q. Okay. And which antibiotics are you looking at?

A. All of them that are on the market.

Q. Like Cubicin?

A. There are different classes of antibiotics. They have different resistance rates. I will butcher the pronunciation of their product names.

Q. Okay. And why did you think there might be commonalities?

A. I think in both markets there is concern about overuse or inappropriate use of the products.

So, in the case of antibiotics, the concern is that well-meaning doctors write too many prescriptions for antibiotics. Patients don't necessarily use them as directed. And that combination, using antibiotics where they're not appropriate or not taking them as directed, has led to problems of increased resistance to these products, making them less effective and putting us at risk for big public health issues down the road.

Q. And have you studied the reasons why doctors are overprescribing?

A. That's the subject of the project, yes.

Q. And have you looked at that subject in the U.S.?

A. I have not.

Q. And in terms of your invited talks, do you have a list of what subjects you spoke on?

A. No, I don't have that list.

Q. Okay. You have looked at the biassing or potentially biassing effect of financial ties between pharma and FDA advisory committee members, is that right?

A. That's right.

Q. And what prompted your interest in that subject?

A. In part it was my Ph.D. student. She was my Ph.D. student. She is now an assistant professor who is the co-author on that paper. So, her dissertation looked a lot at information problems in markets.

And, so, we were interested -- she came to me with the idea that we look at something on biased advice in this particular context.

The advantage here is that there is relatively public information about these advisory committees. So, what we have spent a lot of time doing is going through the transcripts of the advisory committee meetings to record how individuals voted and then try to identify the financial ties of each of those individuals to -- to the pharmaceutical industry and then we have a structural model that tries to disentangle how much of their voting is explained by a pro-industry bias versus greater expertise.

Q. And you found a little bit of both?

A. Yes.

Q. And who was the student or now professor that you're working with?

A. Fanny Camara.

Q. And that's resulted in one paper thus far?

A. That's right.

Q. All right. And what was the nature of the model that you used?

A. It builds on a model of Supreme Court Justice voting, a paper published in the AER a few years before we started this project.

So, again, what we -- what we try to model is a vote by each of the experts controlling for lots of the expert characteristics that we can observe, such as how many degrees they have, what their medical specialty is, how much experience they have on these FDA meeting -- these FDA advisory committees, how many publications they have. We have all sorts of data that we try to collect.

Q. And does that kind of modeling have a name?

A. It's a structural model of voting.

Q. But I guess I would ask which statistical tools do you employ?

A. Maximum likelihood.

Q. And is that sort of a species of a larger genus, if you understand? Like what sort of category of statistical modeling is maximum likelihood modeling in?

A. I'm not sure that I completely understand your question.

Q. Sure. Would you say that's -- and I'm just saying these as examples. I actually have no idea because you're the expert.

Are they Bayesian models? Are they multiple regression models? Are they -- would you put them in sort of a larger category of analysis?

A. The underlying model that we use in that paper does allow experts to Bayesian update their beliefs about whether a drug should be approved or not.

It is not -- when people say multiple regression, I think often they mean a linear regression. It is not a linear model. But there are multiple explanatory variables. So, it is multiple in that sense.

Q. Would you call it a residual analysis?

A. No.

Q. Have you ever employed residual analysis?

A. As a diagnostic, yes. But I haven't -- it hasn't been the main focus of any paper.

Q. In which papers have you employed residual analysis?

A. It's sort of the standard data analysis that one does in preparing a regression to ensure that the important assumptions necessary for a model to be valid are actually holding in that

context.

Q. Okay. And have you studied the impact of financial ties or benefits from pharma on any sort of subject other than advisory committee members of the FDA?

A. No, that's the only one we've looked at so far.

Q. Do you know what KOLs are?

A. Yes. Key Opinion Leaders.

Q. Did you know what they were before this case?

A. I had heard of them, yes.

Q. Had you heard of them in context with your work or just sort of generally?

A. Just generally.

Q. And in your work in this case have you made any attempt to study the impact of, you know, financial ties or benefits more broadly in connection with the opioid crisis?

A. No, I have not. In part, because my understanding was that for the products that I was focused on in this report, Allergan had not engaged any Key Opinion Leaders.

Q. And you mention that some of your

understanding of what marketing Allergan did or didn't do came directly from counsel, correct?

A. Actually, for the most part it came from the depositions of Allergan expert -- or Allergan witnesses.

Q. Can you look at paragraph 46 of your report, please. I beg your pardon. Oh, yeah. No, no. 46.

Do you see the first sentence says, "My understanding, informed by counsel" --

A. I'm sorry. I went to page 46.

Q. I'm sorry. Paragraph 46.

Do you see there that the first sentence of that paragraph references what you were informed of by counsel?

A. The sentence reads that "My understanding, informed by counsel and review of documents, Plaintiffs' complaints, discovery responses, witness testimony and expert reports."

So, that was, as I said, my recollection is that most of -- most of my statements were the result of having read the Plaintiff or -- sorry -- the Allergan witness depositions. And then, yes, there were times when I would try to confirm with

counsel that in fact no Key Opinion Leaders had been engaged, that there was no evidence of that.

Q. What parts of your report reflect facts that you were informed of by counsel as distinct from having learned through these reviewing documents and other materials?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. The only area where I think that that's -- where that's true is in understanding which products to focus on, so who owned what products. So, those are listed, that's discussed in paragraph 43.

BY MS. GEMAN:

Q. Okay. We talked earlier about whether you had testified for or in front of any U.S. government agency.

Have you ever -- my separate question now is have you ever worked for any U.S. government agency?

A. I was a research assistant at the Federal Reserve Board after college.

Q. And that was referenced in your CV I believe?

A. I think so, yes.

Q. It was. Okay.

And if we could just go back to your CV for a minute, please, and look at page A-9.

MS. WELCH: CV you said.

MS. GEMAN: Yes.

BY MS. GEMAN:

Q. What is PhRMA?

A. It is the trade association for branded pharmaceutical firms in the U.S.

Q. And Allergan is a member, is that right?

A. I have -- probably. I haven't looked at their membership list.

Q. How much in grants have you gotten from PhRMA?

A. That's the only one that I recall. It was a long time ago because I was still at Duke. So, that means more than ten years ago. I think it was something like $10,000.

Q. How would you characterize the expertise you bring to this case?

A. I'm an expert in the economics of the pharmaceutical industry.

Q. Let's look at the materials considered,

which is Appendix B.

Now, the first sentence reads, "I incorporate by reference all materials cited in my expert report."

So, that leads me to ask. Are there materials that you considered that are not listed in Appendix B?

A. No. This is meant to be a list as complete as possible about materials that I considered.

Q. All right. And the first section is "Data." Is this list complete?

A. To the best of my knowledge, yes.

Q. Did you review Gruber's backup data?

A. I did not personally review that data. It was my team at Bates White.

Q. Who at Bates White reviewed that data?

A. I'm not sure that I know all of the individuals involved. In particular, I don't know who -- who did whose data. I don't know who focused on the Rosenthal backup data versus the McGuire backup data versus the Gruber data.

Q. But you personally looked at the Rosenthal, Cutler and McGuire and McCann backup

data?

A. By looking at data, do you mean did I open those files?

Q. You say you considered those materials. So, what do you mean?

A. Well, they're inputs into my analysis or my team ran sensitivity checks on their analyses and that informed the report.

Q. Did you look at any of the files -- did you look at any of the backup data for the four experts you mention in this list?

A. I did not touch the data. It was on a secure server. It was handled by the set of people who knew where everything was who kept things organized and clean, and that was their responsibility. I didn't touch it myself.

Q. Did you have access to that server?

A. If I had requested access, yes. I think the exception probably was to the mortality data because I didn't sign an agreement to have the right to use that data until fairly late in the process.

Q. All right. And is there a reason Gruber, the Gruber data is not listed here?

A. I don't comment very much on the Gruber report, and we didn't do any kinds of sensitivity checks of his analyses. He provided more of a high level overview of the markets and it wasn't directly pertinent to the analyses that I wanted to do for Allergan.

Q. So, just to be clear, did anybody look at his data?

A. I don't know if anyone looked at his data.

Q. Okay.

A. I'm sure they had access to it, but I don't know the -- I don't know.

Q. Okay. And how did you select the depositions that you reviewed?

A. The depositions from the Allergan experts were suggested to me by counsel as being the ones most pertinent to understanding Allergan's marketing strategy. So, that would be the Altier report -- or deposition, the Snyder deposition, the Boothe deposition and the Leitch deposition.

Q. Did you read those depositions cover to cover?

A. I skimmed them at least cover to cover.

There are certainly some sections that I focused on more intensively.

Q. How were those sections made available to you?

A. I'm not sure I understand the question.

Q. I will ask a more general question.

How did you get these transcripts? Were they, you know, e-mailed to you? Was there a file given to you?

A. Bates White had created a folder for me with the relevant materials on a secure server at their offices in Washington, so I connected via this secure server. It was set up in a way where I could not download anything or print anything myself to make sure that we respected all of the confidentiality limits.

Q. Did anybody provide you with a summary or selected pages or any other sort of crosswalk to the depositions to facilitate your review?

A. For those depositions, I don't believe so. For some of the other -- for the economics depositions, I read them closely myself. I believe for the Perri deposition, one of the Bates White team members who had read it closely then directed

me to specific sections.

Q. Just so I am clear, is the Perri deposition the only one where you were directed to specific sections?

A. That's my recollection. I'm sure that -- I know that at other points as we were -- as I was drafting the report, that a couple of the team members who had read all of these depositions and other expert reports very closely would -- would point me to supporting statements or statements that were informative about a point that we were making.

Q. Were those in writing?

A. Either -- so, no, not in writing.

In general, our information exchange took place through conference calls where we would share screens and look at documents together or in the -- in the draft of the report, a comment would be added to suggest that I look at pages X and Y of another document.

Q. Did you ever look for contrary information?

A. I myself always searched for any mention of Allergan or the Allergan products regardless of

whether my team had directed me to them.

Q. But did you look expressly for contrary information?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. So, I read these depositions. I read the other reports. If I saw information that was perhaps less helpful to Allergan, I certainly took note that there was -- that that information existed.

But I don't know what search terms I would use other than looking for Allergan, Actavis, Norco, Kadian.

BY MS. GEMAN:

Q. What did you see that was not as -- perhaps less helpful to Allergan?

A. I can't recall specific statements that I thought, oh, that really worries me. There was obviously, as I discuss in the report, the corrective action, the FDA warning letter and corrective action.

Q. Did you look at their return on investment materials?

A. Are you referring to the marketing

documents where there was a claim from a marketing firm that there would be a return on investment?

Q. No, I'm referring to anything that you would consider return on investment materials.

MS. WELCH: Objection; form.

BY MS. GEMAN:

Q. By Allergan or for Allergan.

MS. WELCH: Same objection.

BY THE WITNESS:

A. I looked at documents that were referenced in the depositions that referred to some kind of PowerPoint or report generated by an outside marketing company suggesting there was a high return on investment from doing detailing.

BY MS. GEMAN:

Q. And did you -- you seem -- there is some skepticism in your voice. Do you have a skepticism about these outside marketing firms?

A. Well, I think it's obviously in their interest to claim that there is a high return on their services. So, I take that with a grain of salt.

Q. Did you believe -- did you separately study any ROI for Allergan?

A. I did not calculate specifically an ROI, although in my analysis I look at actually what happened after a physician was visited by an Allergan detailer and so I can get a sense of what the return is. I didn't calculate a precise number.

But for the physicians that I focused on in the two bellwether counties here, out of the 41 that I could identify, only two of them had an increase in Kadian prescribing. The others either held roughly steady or fell. So, I infer from that that the return on investment was not high.

Q. So, how do you square that with what Allergan itself or its marketing personnel found?

MS. WELCH: Objection; form.

BY THE WITNESS:

A. I don't think that they actually calculated a realized return on investment. They had documents suggesting that investment would yield these big benefits, but I don't -- I don't recall seeing any calculation ex-post that that -- that those forecasts were accurate.

BY MS. GEMAN:

Q. And did you ask for those documents, any

ex-post documents, to be shown to you if they existed?

A. No, I did not specifically ask for ex-post documents.

Q. And how did you select the documents that are listed in Section B.3?

A. Again, not every single one of things is cited. These are materials considered. These were materials that were provided to Bates White and to myself and so I list them here.

Q. What was the criteria for their provision? Why these documents and not others?

A. To the best of my knowledge, I provided everything -- I listed everything to which I was given access.

Q. No. But my question is a little more fundamental, which is what is the criteria for why you were given access to these documents? Are these documents you requested? Are these documents someone else decided would be germane to your report? Why these documents in the whole universe of documents?

A. So, most of these documents refer to marketing activities, and that's why they were

provided to me, because a lot of the focus of my report obviously concerns marketing.

Q. Did you ask for all marketing documents?

A. Yes. I was provided with every -- with all the marketing documents, all the marketing data that Allergan had available.

Q. Okay. And were you able to query the database that contains these documents?

A. I'm not sure what you mean by that.

Q. Do you have an understanding of whether there's a sort of database that holds the documents produced in this litigation?

A. All of these documents were made available to me in a folder on a secure server. So, I had access to them. I didn't need to do a database query to access them because they are pdf's and Excel files.

Q. They were made available to you in pdf?

A. Many of them here are pdf documents, yes.

Q. And do you know who put together -- well, strike that.

So, the -- what are the documents -- if you look on page B-25 and B-26, what are the MULTI

documents?

A. I don't recall specifically.

Q. What are the SHC documents?

A. I don't recall specifically.

Q. What are the PPLPC documents?

A. I don't recall specifically.

Q. Did you look at documents from other Defendants?

A. No.

Q. And are you offering any opinions on the efficacy of the marketing of any of the other marketing Defendants other than Allergan?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. No, I am not.

BY MS. GEMAN:

Q. And how did you determine which case law, expert litigation and publicly available documents to review?

A. So, you're on?

Q. I'm on pages B-2 and B-3 through B-7.

A. So, of what's cited here, obviously some of these documents are specific to this litigation. So, that seemed -- that seemed relevant.

Some of the others the Bates White team was familiar with and pointed me to.

Of the publicly available documents, the academic literature includes papers that I was either already familiar with or identified in the course of looking for relevant work.

Q. Did you look for relevant work?

A. Yes, I did.

Q. Okay. So, how did you look for relevant work?

A. I did a standard literature search. I also looked at presentations. I tried to look at conference presentations from the last couple of years to make sure that I picked up recent working papers that were not in journals at this point.

Q. And what criteria did you use to look for those?

A. You mean what search strings did I use?

Q. Sure.

A. Opioids, opiates, effective marketing. It depends on which subject area we're talking about. In many cases I would start with one paper that seemed relevant and I would look at the references cited by that paper, and that would lead

me to another set of papers.

Q. And, so, you described materials considered. That's what this appendix is, right?

A. Yes.

Q. Are you drawing a distinction between materials considered and materials relied on?

A. Perhaps you can explain to me if there is a legal difference in how I should answer that question.

Q. Well, I mean, did you rely on all these documents in forming your opinions?

A. They were considered. I am not sure each one -- that I can then point to each document and say that was specifically pertinent to this statement. I wouldn't be able to make that mapping.

Q. Okay. Are there any documents here that you're sure you did not rely on?

A. I can't say with certainty that I did not rely on any of these documents. What I'm trying to explain is that I can't make a mapping of this specific document led into this specific analysis.

Q. Okay. And you have a separate appendix,

Appendix D, on sensitivities, "Alternate sensitivities of Rosenthal models"?

A. That's right.

Q. Have you provided all the alternates that you looked at?

A. No. I'm sure that we -- in fact, I know that we tried other depreciation rates, just to take an example. So, this was not an exhaustive list of all the sensitivities. It was meant to demonstrate that the model -- that her specification is quite sensitive.

Q. And did you look at sensitivities of any of the other experts?

A. Yes. So, as I've described in Section VI.F, I look at the sensitivity of Professor Cutler's analysis to changing his unit from shipments derived from the ARCOS data to prescriptions as used by Rosenthal.

Q. And is there a reason you didn't put forth the alternatives?

A. Well, I include them here.

Q. Okay. I mean, I guess I'm saying is there a reason you didn't make a separate appendix? Why did you call out the Rosenthal?

A. Ah. Because that is the model that -- that we did the most testing of.

Q. Okay.

A. And my view is that because that's the critical input to every report that follows, to all of the calculations that follow, that this was the one that it was worthwhile spending the most time verifying and so that's what we -- we have included a lot of these analysis -- of these sensitivities or alternative analyses to demonstrate that there was -- there was a lot to worry about in her estimate.

MS. GEMAN: I think we have been going just over an hour. Do you want to take a break?

MS. WELCH: Sounds good.

MS. GEMAN: How do we -- it might be too early for lunch, but how have you guys been doing it?

We can go off the record. I'm sorry.

THE VIDEOGRAPHER: We are off the record at 11:44 a.m.

(WHEREUPON, a recess was had from 11:44 a.m. to 12:03 p.m.)

THE VIDEOGRAPHER: We are back on the record at 12:03 p.m.

BY MS. GEMAN:

Q. So, if I could ask you to please turn again to Exhibit 6, which is your report, and if you could please confirm that that is your signature on page 135.

A. Yes.

Q. And we talked about this a bit at the beginning of the day, but in case anything has refreshed your recollection.

In addition to the two Defendant -- two or three Defendant expert reports you mentioned, have you read any materials since May 10th about this case that you had not previously read?

A. No.

Q. And does this report, your May 10 report, reflect a full and complete statement of the opinions you intend to offer in this matter?

A. I have, I believe, at the start reserved the right to issue supplemental reports depending on the availability of additional information or new information and specifically a supplemental report concerning Dr. McCann's allocation of products to Allergan.

Q. So, are you still working on Dr. -- your

response to Dr. McCann?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. My team is working on that analysis now. I have not drafted anything or even made a final decision as to whether to submit a supplemental report.

BY MS. GEMAN:

Q. And what will you base that decision on?

A. Whether it looks like there are gross errors in the results.

Q. And other than sort of reserving your right to render additional opinions about Dr. McCann, does this reflect a full and complete statement of your opinions in this matter?

A. As of May 10 or as of now, June 5. But, again, I've reserved my right to make modifications if there is new information or new materials that come out.

Q. And have you currently been tasked with doing any work in this case by your client?

A. Beyond appearing here for the deposition?

Q. Yes.

A. No. So, as I said, my team is reviewing the McCann materials. So, it is possible that I will work on a supplemental report after we have finished here today, this week. But I have not been doing anything other than preparing for this deposition since submitting the report.

Q. And you're not intending to submit any additional opinions about any other aspect of your report, correct?

A. Again, I have reserved the right if new information becomes available or new materials become available.

Q. Do you have any corrections to be made to your report?

A. I have a couple of minor corrections, yes.

So, on the top of page 17, the second bullet point, the last statement should read, "Today, Allergan owns Norco but contracts with Teva Pharmaceuticals, Inc. to manufacture Norco and contracts with UPS SCS, Inc. to distribute," and it should read "Norco" rather than "Kadian on its behalf."

Another correction is on page 31, in

paragraph 68, there is a statement that begins, "Similarly, Percocet is a combination," and it's written here "hydrocodone and ibuprofen," and that should be "oxycodone and acetaminophen."

Q. Tylenol, in other words?

A. Tylenol is the brand name for acetaminophen.

Q. Yes, I know.

A. And one other correction. Figures 10 and 11 on pages 43 and 44. The title for Figure 11 corresponds to Figure 10 and vice versa.

And the only other issue I spotted, I don't think it's material, is that when I give the acronym for OARRS, the Ohio Automated Rx Reporting System, sometimes there is an extra "Reporting" provided in parentheses, so it says OARRS and then Ohio Reporting Rx Reporting System. It's just a mistake in describing the acronym.

Q. It's like when someone says a VAT tax or something.

A. I'm not sure what happened.

Q. Okay. Any other -- now, do you consider any of these changes material?

A. No, I do not. I think for clarity

Figures 10 and 11, that was important to explain. The others are just factual misstatements but not especially important for the formation of any opinion.

Q. And if you do discover inaccuracies, we would appreciate if you provide those to us in advance of trial.

A. Of course.

Q. And if you could please read the first sentence of paragraph 5.

A. "I have been asked by counsel for Defendant Allergan to determine whether and to what extent Allergan's promotion of its prescription opioid products caused harm to Plaintiffs Cuyahoga and Summit counties."

Q. And how do you define "harm"?

A. I've used the primary measure employed by the Plaintiffs, which is mortality.

Q. And you're not making any opinions on any other forms of harm to the counties, correct?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. So, as I explained earlier, the approach that the Plaintiffs have taken is that they try to

establish this causal link, causal chain between detailing and marketing, shipments and then shipments and mortality. And based on the mortality estimates, they use that to allocate harm, all these other kinds of harms that one might image to be linked to opioids.

So, I stopped at mortality mainly because I was focused on the causal links between detailing, shipments and that clear measure of harm. That's what Professor Cutler identified as the best measure of harm in this context.

BY MS. GEMAN:

Q. And you say you stopped mainly because that's what the Plaintiffs did. What are the other reasons you defined harm by mortality?

A. That was the preferred measure stated by Professor Cutler.

Q. Did -- and, again, just because the jury is going to want a more direct answer, are you making any opinions about any other kinds of harm?

MS. WELCH: Objection to form, asked and answered.

BY THE WITNESS:

A. So, because the estimates of the other

kinds of harm are linked to the estimate for effects on mortality, for me it was sufficient to show that in the case of Allergan it was -- I could not find a causal link between Allergan's detailing activities and mortality. That's why I stopped there.

BY MS. GEMAN:

Q. Okay. And you were also asked to evaluate the opinions offered by four of Plaintiffs' expert economists, correct?

A. That's right.

Q. Are you -- and you also reviewed the expert reports of Dr. McCann and Ms. Keller, correct?

A. That's right.

Q. Are you evaluating their reports for any purpose other than evaluating whether in your view they correctly identified transactions associated with Allergan products?

A. No. That's my focus.

Q. What is Dr. McCann's area of expertise?

A. These two were both focused on diversion of products; and as I understand it, their areas of expertise are supply chains and the DEA.

Q. And do you have any knowledge about those areas?

A. I have superficial knowledge of those areas. But my area of expertise, my scope is outside that.

Q. You have no expert knowledge in those areas?

A. That's right. That's why I am not opining on them.

Q. And you also reviewed a number of other reports by Plaintiffs' experts, correct?

A. Yes, I looked at some of their medical experts as well.

Q. And for what -- strike that.

Did you -- are you offering any opinions about those reports?

A. No, I am not.

Q. You're not offering any criticisms about those reports?

A. No, I am not.

Q. You have no opinions about the methodology in those reports?

A. No, I do not.

Q. Do you have any expertise in the areas

that were the subject of those reports?

A. No, I do not.

Q. Okay. And with respect to the economists, Gruber, Rosenthal, Cutler and McGuire, have you stated all of your criticisms in this report?

A. I stated the criticisms that I thought were most pertinent. I'm -- I can't rule out that there are other criticisms that I might -- that I might have overlooked at some point, but these -- I tried to summarize to the best of my ability the problems that seemed most important for this analysis.

Q. So, are you saying that this report is not a full statement of the opinions you intend to render about these four economists?

A. I have summarized here everything that is pertinent in their reports to my report.

Q. Okay. So, you understand you're not just going to show up at trial and say, "Oh, by the way, I also have all these other issues that I haven't previously told anyone about"?

A. That's right.

Q. Okay. And just a quick question about

Ms. Keller. Do you have any opinion about the compliance metrics that she used in her report?

A. That I -- I have not focused on that at all. My focus was on the expert economists.

Q. And have you ever had occasion to try to identify specific drug transactions from data in your past work?

A. I have not worked with the ARCOS data in the past, no.

Q. What about with other data sources that would permit the identification of specific transactions?

A. I cannot recall a data source that provided detail at the level of transactions during the supply chain, no.

Q. And are you offering any opinions about the distributors' either adherence to or derogation of their duties to monitor?

A. No.

Q. Did you have any understanding of the distributors' duties before this litigation?

A. Only at a very superficial level.

Q. And did you speak with anybody at Allergan in connection with preparing your report?

A. No, I did not.

Q. Do you know if the Bates White personnel spoke with anyone at Allergan in connection with preparing their report?

A. I don't know with whom they spoke, no.

Q. But do you know that they spoke with anyone?

A. I don't believe that they did, but I can't answer -- I don't have a complete accounting of everything that went on at Bates White.

Q. And have you met with counsel for Allergan? I'm not asking for any content.

A. Beyond the counsel that I've already listed here?

Q. Sorry. Yes. You have talked about how you have met with outside counsel.

A. Yes.

Q. Have you met with any in-house counsel?

A. No, I have not.

Q. And, so, you summarize your opinions in Section I.E of your report, which goes from paragraphs 23 through 30, is that correct?

A. Yes.

Q. So, what I would like to make sure that

the jury understands and that I understand is the bases of each of these opinions. So, let's start with paragraphs -- let's start with paragraph 23.

A. Okay.

Q. So, can you describe the basis for the opinions set forth here in paragraph 23.

A. Sure. Much of that is covered in Section VI of the report. So, let me start with the model employed by Professor Rosenthal.

The first major issue that I identified was that her data have a stationarity problem. So, the issue here is that she is regressing national sales on total marketing, so it aggregated over all products for every month at the national level.

And the problem here is that these are both time series, moving largely in the same direction; and in situations like this, it can be very difficult to identify a causal effect.

So, there is a specific test that typically an economist would run when using time series data like this to verify the stationarity of the underlying data series. And, in fact, I ran that test, and it provided evidence that there is a stationarity issue here.

Q. And have you ever become familiar in the economic literature with situations in which stationarity does not cause a spurious relationship?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. I am not aware of a regression where there is a stationarity problem that does not cause a spurious relationship or that does not have the risk of a spurious relationship, more precisely.

BY MS. GEMAN:

Q. All right. Well, what is the difference?

A. Basically we can try and rule out risks of spurious relationships, but we can never -- it's never possible to say with absolute 100% certainty that the relationship doesn't exist.

Q. And you criticize Dr. Rosenthal for using national sales data?

A. That's correct. Well, there is specific issues. It's not just that it's national sales data. It's that the sales data have been aggregated across all products, which removes potentially interesting and important sources of

heterogeneity.

And because that -- the use of an aggregate model like this means that Professor Rosenthal is relying purely on time series variation to identify the causal effect of detailing on sales, she runs into this problem of it being very difficult to identify such a causal relationship.

Q. And what are the -- what are the benefits of statistical aggregation?

A. Frankly, in this case I don't see any benefits from statistical aggregation because I think the underlying heterogeneity is important for understanding differences between the Defendants, between the products, between the timing of when different marketing programs were introduced.

There are other issues with moving to the aggregate level when one then wants to take the aggregate estimate and apply it to a more micro level, such as a county.

Q. But my question was what are the benefits of statistical aggregation?

A. Again, I do not see a benefit of aggregating in this context. Sometimes we have no

choice because aggregate data is all that exists and sometimes the underlying sources of heterogeneity that we're aggregating over are not interesting or useful.

Q. And it's more than that, though, right? I mean, what happens if you disaggregate data too much to power and significance?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. To statistical power and statistical significance, in general, you're going to have greater power and greater statistical significance when you don't aggregate because you will have more observations and more sources of variation with which to identify effects.

BY MS. GEMAN:

Q. Can you explain the basis of your statement that you have more observations when you don't aggregate?

A. So, by definition, aggregation means that you're summing over a set of observations, a set of smaller units. If instead the analysis is conducted at the level of the smaller unit, you have more observations. And in general more

observations help in statistical analysis.

Q. So, you would agree, then, that if the disaggregated units have small numbers of observations, then that is not helpful in statistical analysis?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. I don't think that's what I stated. My statement is that in aggregating across units of observations, one loses observations by definition. If I start with ten micro units and I aggregate across them to one observation, I have lost observations and I've potentially lost information.

And that makes statistical analysis more difficult because in general statistical significance depends on the number of observations and the ability to use underlying variation in the data to identify effects.

BY MS. GEMAN:

Q. But you understand that if you -- if the disaggregated units have many fewer observations, then you're depriving the data of significance, right?

A. No, I don't think that's an accurate

statement.

Q. Do you know if that's a conclusion that courts have drawn when looking at statistics?

A. I have not looked at court decisions weighing in on statistics. What I can say is that certainly economists prefer in general to work with data at a more micro level rather than losing observations or losing information through aggregation.

And the only reason that I -- that I usually see that done is if there is a concern about too much random noise at the very, very micro unit.

However, I don't think that that's a valid concern in this case because much of the analysis that the Plaintiffs do is at the county level, and I see no reason why the start of the analysis should be at the national level rather than at the county level.

Q. So, your opinion is that the data should be analyzed separately by county or in the aggregate with counties as a control or something else or counties as a variable or something else?

A. My opinion is that because eventually --

along the chain of causality that the Plaintiffs have alleged there is a relationship at -- they allege that there is a relationship between county level shipments and county level harm, that it makes more sense to start with county level detailing at the beginning because that exploits not just variation in detailing over time in order to identify the effect of detailing on sales, but also differences across counties in the extent of detailing. So that cross-sectional variation provides more statistical identification.

Q. Okay. And did you consider -- strike that.

So, we went off on a sort of tangent about aggregation.

Were you done describing the bases of your opinions as set forth in paragraph 23?

A. No.

Q. Okay.

A. So, that is my first criticism of the -- of Professor Rosenthal's model, that this stationarity issue is a very serious one.

And when I do the standard corrections for -- for this problem, I do that first by doing

what's called a first differences model and next by taking logs.

So, both of these data transformations are ways that we eliminate the stationarity problem in the data. And then I rerun her analysis, keeping everything else the same except for making these two different data transformations.

And when I do that in the first differences model, there is no statistical significance in the regression results between the stock of marketing and sales. So, that's, again, that's a core estimate for her. And the statistical significance falls apart when this correction is made.

In the other sensitivity check, so the other transformation using log-logs, the coefficients are statistically significant but the calculation of the impact of Defendant promotion on MMEs drops to less than 3%.

So, it's a much smaller estimated effect with making -- after making that change.

Q. So, it's statistically significant but in your view it's not practically significant?

A. It's certainly much smaller in

magnitude. And I also want to make clear that I don't view that as the only problem with this model.

So, I'm just pointing out that her estimate is not robust to making these necessary changes to address stationarity, not because I think that these are necessarily valid estimates either.

Q. Sorry. But you've -- just so the record is clear, the answer to the question is you agree that the results were indeed statistically significant?

A. In the sensitivity analysis where I use a log-log model, the coefficients that result are statistically significant. They imply a much, much smaller percentage of Defendant promotion on MMEs.

But, again, I don't want to affirm that these are the correct estimates of the relationship between detailing and sales.

Q. But just stated more clearly to sort of fill in what the coefficients are, in your log-log model -- and, by the way, that's a common model, is that correct?

A. That's a standard transformation of data

to deal with stationarity issues.

Q. So, you found a statistically significant relationship between Defendant's promotion on the one hand and what on the other?

A. Without making any other of the changes to the model that I think are necessary in order to provide some confidence in establishing a causal relationship between detailing and sales, then, yes, that is the result. That's why I have included the table here.

But, again, I want to make it very clear that I do not affirm that I think this is a correct estimate either.

MS. GEMAN: Move to strike as non-responsive everything after "Yes, that is the result."

BY MS. GEMAN:

Q. Okay. Any other bases of your opinions in paragraph 23?

A. Yes. Another issue in the model that Professor Rosenthal has used is that she has ignored the endogeneity of detailing on sales.

Q. So, let me ask you a question about that.

There is -- you understand, I think,

that the relationship of promotion to sales is studied all the time?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. You mean in the academic literature, is there a large literature on the relationship between detailing and sales? Yes, I understand that.

BY MS. GEMAN:

Q. And so describe -- I didn't mean to cut you off. You were saying that the basis for your opinion in paragraph 23 is you believe Dr. Rosenthal's models, I don't know if you mean both her models, but at least one has, in your view, endogeneity bias?

A. Yes. The direct model, which relates detailing to sales, has an endogeneity problem.

Q. And do you think that what you as Allergan's expert consider the stationarity problem applies to both of Dr. Rosenthal's models?

A. No. It applies to the direct model, which relies purely on time series variation.

Q. So, to be clear, you are not issuing a criticism that Dr. Rosenthal's indirect model has a

stationarity problem?

A. That's correct. I have not stated in my report that there is a stationery problem with the indirect model. I have other criticisms of that model, but it isn't stationarity.

Q. Okay. So, going back to endogeneity, which model do you think has this problem?

A. Again, the direct model, because just to be clear, the indirect model does not -- is by definition indirect. So, there is no detailing in the indirect model.

So, when I refer to the endogeneity of detailing and sales, I refer to a specification in which detailing appears as an explanatory variable.

Q. I understand. But that's -- that is, in your view, the only source of endogeneity bias, correct?

A. That's the one that -- that I'd like to -- in terms of endogeneity of sales and detailing, that exists in the direct model.

Q. Well, hang on. That is the only endogeneity issue that you identify in your report. Are you now offering new opinions?

A. So, to be more precise, the indirect

model has an omitted variable problem, which is related to endogeneity.

Q. Okay. We can talk about that.

So, do you have any other bases for your opinions in paragraph 23?

A. Yes. So, in addition to the endogeneity issue, my criticism is that Professor Rosenthal has introduced enough flexibility into the direct model that it is essentially too flexible. It's capable of fitting many time series that move together without having any economic justification for that relationship.

And, so, I specifically experimented with using her approach to explain sunspots, and I could show that using that level of flexibility in the direct model also produces what she would -- if you take her model seriously, would be a causal relationship between detailing and sunspots.

And that's to illustrates that this is a problem. The model is essentially -- has too much flexibility to establish this relationship.

Q. So, you agree with the economic justification that she has or you disagree with the economic justifications that she has?

A. She doesn't have very many economic justifications.

Q. Okay. But she has them and you disagree with them. Is that fair?

A. So, to the extent that she introduced economic justifications for model C, for example, so this is where she includes a number of events that she explains could influence sales of opioids during this time period, even she agrees that the results on the coefficients that she obtains from including those events don't make a lot of economic sense, which again suggests that there are problems with the model.

I don't disagree with her hypotheses that, for example, changing the guidelines would have an effect on sales. My concern is that she doesn't obtain the coefficients that she expects, and the rest of the coefficients move around sufficiently that it throws the entire model into doubt.

Q. Do you think you're better situated to opine on the economic justifications that she offers than she is? Do you think you have sort of greater knowledge or background?

A. So, again, I don't disagree with her ex-ante hypotheses about, for example, the different events or the effect of price on sales. On that we agree.

My issue is that her model then generates estimates which are inconsistent with that economic -- the economic hypotheses that underlie them, which for me creates some credibility issues with the model. It suggests that this isn't the right model.

Q. What is the right model?

A. That, I have provided some evidence about the relationship between Allergan detailing, shipments and mortality elsewhere in the report.

Frankly, I don't think that using aggregate data and the approach taken here has -- even if I do all of these other fixes, I still think we're left with a problem of too little information to work with.

Q. How would you study the effect of Allergan, Allergan's detailing of opioids on sales?

A. So, I did that. I did it very directly by trying to relate Allergan detailing at the county level to shipments and to mortality.

Q. And those were your -- some of those were the sort of merely descriptive statistics, right?

A. No, there are regressions as well. This is in Section V.B.

Q. Let's just go one at a time.

The first -- the first few of those were merely descriptive statistics, correct?

A. I show some figures, too, to make the point visually but then I also have regression analyses.

Q. Okay. But talking about the figures that you claim make the point.

A. Okay.

Q. There is no inferential statistics in those, correct?

A. No. It's to illustrate a relation -- that there is no obvious relationship apparent in the data, and then I go on to verify that with regression analyses.

Q. And would those regression -- you describe -- have you accurately described all the specifications of those -- I believe you did a -- you put a yearly dummy, right, every -- for between

2009 and 2012. Maybe you can point me to the page. I think we're talking about the same thing.

A. Sure. I'm looking at page 71.

Q. Okay. Thank you.

Does footnote 224 completely and accurately describe the analysis that you did as in -- underlying the, I guess, graphs or figures that are listed as Figure 28?

A. It accurately describes the results from all of the sensitivity analyses that we did. The ones that I specifically list here are some subset of all that were tried.

So, just as an example, we tried with zero percent depreciation and a depreciation -- depreciated stock using 5% annual depreciation.

It's -- I don't recall exactly how many other specifications we ran with alternative depreciation rates. But since they all pointed in the same direction, I didn't see -- consider it necessary to list every single one here.

Q. Are they in your backup?

A. Yes. Well, are the regressions themselves in the backup? No. But the data is available for anyone to run such sensitivity checks

if they're worried about it.

Q. Does the backup contain all the model specifications that you employed, someone could easily replicate your analysis?

A. Someone could easily replicate the analysis, yes.

Q. And who chose these particular outputs for Figure 28? Who at Bates White?

A. Oh, I chose the outputs.

Q. You chose these outputs. And you chose these out of how many?

A. So, we had data on detailing for 2009 through 2013 I believe. So, it was a question of choosing which year. And we settled on 2010 because that was the first full year of Allergan detailing I believe.

I think, if I recall correctly, somebody on the team at Bates White generated the figures for every year and they all looked about the same. So, it didn't seem necessary to add to the number of figures here.

Q. Okay. Back to paragraph 23. Anything else about the bases for your opinions in paragraph 23?

A. So, I've talked about stationarity. I've talked about endogeneity. I have talked about some of the issues with aggregation.

There was also an issue with the price index that Professor Rosenthal used. So, making a correction to her price index also altered the results that one obtains in a way that calls into question the reliability of the model.

Q. So, is the -- now, this is leading into another of your criticisms.

But you're referring to Dr. Rosenthal's model about the collective marketing, is that correct?

A. Her -- her direct model of aggregate detailing and aggregate shipments or aggregate sales.

Q. Now, is this criticism or is this basis of your criticism in connection with the price index applicable to both of her models?

A. I'm trying to remember now the details of her indirect model.

No. It only pertains to the direct model because she does not actually include a measure of price in the indirect model, if I recall

correctly, because in the indirect model she's relying on cross-sectional variation across counties and she wouldn't have county-specific prices in order to include there.

Q. Okay. Any other bases for paragraph 23?

A. Yes. I can go into more details about the issues of having too much flexibility built into the model, but the fact that she allows the model to determine these turning points in sales without any economic justification for those specific turning points is one issue.

The way that she's introduced the splines for different effects in different time periods is also not the standard way that an economist would do this.

I've mentioned the price index issue.

More generally, again, in a model that uses only time series variation, it's very difficult to include lots of other controls, things that would also be changed -- potentially driving sales of opioids, so, things like variation across counties in the extent of prescription drug coverage or -- or all sorts of other characteristics at an even more micro level.

Q. I mean, all sorts of characteristics at an even more micro level. Are you opining that there are material omitted variables in Dr. Rosenthal's direct model or is your concern about so-called omitted variable bias focused only on the indirect model?

A. Well, both. In particular, the direct model. The issue is that she -- that it's not possible to include a lot of other control variables in a dataset that has only time series variation.

Q. What I'm -- what I'm asking you is where in this report do you set forth the specific variables that you think are omitted, not just all the variables out there like the color of shirts that people were wearing in the county. I mean, things that matter.

A. So, by the way, I'm not the only person to identify those as potential effects. They're also listed by Plaintiff experts as potential -- as potentially important omitted variables in their reports. But let me just identify where.

Q. No, but I'm asking you.

A. So, one important class of omitted

variables is physician characteristics, just to take one example.

So, there is a large literature explaining that physician characteristics can be more important than detailing in understanding sales, and it's impossible for Professor Rosenthal to include any kind of control for physician characteristics when she aggregates up to this level. That's one example.

Q. And just to be clear, I want to make sure that you've listed everything that you claim is a material omitted variable in your report.

A. I don't think that I would claim to have listed an exhaustive set of omitted variables. I've identified a number of factors which is -- factors identified by the existing literature as well as factors that even the Plaintiffs list as potentially important in understanding opioid sales.

Q. So, are you intending to revise and make new opinions about allegedly new omitted variables that you have sort of just come up with?

A. Just to be clear, it's not -- I didn't view it as my responsibility to come up with an

exhaustive list of omitted variables.

The presence of any omitted variables that bias the signs of the coefficients and therefore the validity of the results that Professor Rosenthal is providing and which are being used as inputs into the other expert reports, that's enough for me.

Q. So, if -- if you have a disagreement about whether an omitted variable is material, you're sort of assuming that your view is correct, that you didn't need to sort -- that you didn't sort of need to go beyond that?

A. Well, I couldn't go beyond it using the data that she was using.

Again, my criticism is that the model that Professor Rosenthal used here at an aggregate level using only time series variation masks -- it is not possible with such a limited dataset to include the controls and account for these other omitted factors in a way that would fix her model.

So, that's -- my criticism is that the model itself is so deeply flawed that it's not even possible to include -- I can't say, oh, she should have put this into that model. It wouldn't be

possible because the model itself has so many issues.

I'm saying if one moved to a different model at a more disaggregate level, so, for example, at the county level, it would be possible to include many more controls that would reduce the risk of omitted variable bias.

Q. Any other bases for paragraph 23?

A. Yes. Again, a lot of -- a lot of what I am about to say is related to the issues of omitted variables or failure to consider potentially other confounding factors.

But as evidence for why that might be important, I describe, for example, the fact that opioid prescriptions and non-opioid prescriptions are increasing at roughly the same rate throughout most of the time period here. It's only after 2010 or so that they diverge because opioids start to fall.

And, so, the fact that Professor Rosenthal's model puts everything on Defendant detailing to explain this increase in sales is troubling because one could run the same kind of model using non-opioid prescriptions and also find

a statistical relationship between opioid detailing and non-opioid sales.

And the fact that that statistical relationship exists suggests that something else has been left out as in there is some other common factor which is driving both opioid sales as well as non-opioid sales.

So, I'm not just pulling out of thin air some -- the color of a T-shirt wasn't included in this regression so we can't trust the results. I have tried in my report at various points to suggest other factors that other -- that the literature in general has identified as important, but also some statistical justification for that.

So, I've mentioned the price index.

So, my other criticisms particularly of the follow-on analyses, because they rely on the estimate from Professor Rosenthal on this causal effect of detailing, for me that's the fatal flaw.

Again, there are a lot of omitted variable concerns that I would have there as well.

And then, again, I'm going to -- I'll come back to the analysis that I did in V.B, which is my best effort to directly test the Plaintiff

hypotheses, which is detailing leads to shipments and shipments lead to harm as measured by mortality; and the fact that I cannot find this relationship for Allergan detailing and shipments or mortality feeds into my criticism of the approach generally that they have taken.

Q. Did you find a relationship between the detailing of any pharma company and shipments or mortality?

A. I did not test for that.

Q. Okay. So, you're not opining that there isn't such a relationship for others?

A. That's right. I only had the data available for Allergan that I could map to the county level, and so that's the relationship -- that was the scope of my assignment and that was the data that I had available.

Q. And are all the criticisms you have of Gruber, Cutler and McGuire set forth in your report?

A. There is one that we haven't discussed yet, which is the sensitivity of Professor Cutler's estimates to a change in how -- and whether we use shipments or prescriptions as well.

Would you like to discuss that?

Q. Well, if you could -- if that is a basis for one of your opinions in 23, then go ahead.

A. Yes.

Q. We'll also go through the others. This isn't -- and to the extent that it's the same basis, you don't have to repeat it. But we'll go through all your opinions.

A. Okay. So, again, what I'm doing here is trying to replicate what the Plaintiffs have done without necessarily stating that I think this is the right model.

I'm merely demonstrating that the approaches that they have taken are very sensitive to changes -- small changes in specification or small changes in data.

So, in the case of Professor Cutler's analysis of shipments on mortality, he actually states in his deposition that he would prefer to do this analysis not with shipments but, rather, with prescriptions.

And I agree with him, that makes more sense given that he is using as an input the estimate provided by Professor Rosenthal. And her

analysis is not about shipments. Her analysis -- her direct analysis is not about shipments. It is about sales or prescriptions.

So, I reran exactly the same thing that Professor Cutler did, changing only shipments into prescriptions at the county level, and that change results in a substantial reduction of his estimated percent impact on mortality.

So, again, I'm not opining that these estimates in Figure 50 are affirmatively those that I believe in. I'm just trying to demonstrate that his specification also is quite sensitive to changes in inputs.

Q. And even that change didn't eliminate his impact on mortality, correct?

A. No, it reduces it a lot. Again, I'm not opining that this is the right estimate either.

Q. And all of your analysis about in connection with -- strike that.

All of your what you're calling sensitivity analysis for Professor Cutler's work is in your backup and in your report?

A. Yes, it is.

Q. Okay. Any other bases for paragraph 23?

A. Again, as I've mentioned, I think we'll keep coming back over and over to the issues of confounding factors that were not considered and omitted variables, but I don't need to go through those 20 times.

Q. Okay. So, let's turn to paragraph 24.

Are there any bases for your opinions in paragraph 24 that you have not already touched on?

A. Well, I think we have touched on it, but I'll just be -- I will try to be as explicit as possible here.

Because of the aggregate approach taken, it is not possible in the Plaintiff models to identify the impact of any specific Defendant.

And, so, since my concern in this report is the effect of Allergan's activities on harm, for me this is an issue, because there are for all sorts of reasons that I describe here, there are reasons to believe that Allergan's effects might be different from others in the industry.

Q. And you state in your report your disagreement with how Professor Rosenthal addressed that issue of whether she has spoken about specific marketers, is that correct?

A. Well, she's quite explicit that she does not consider specific marketers. She estimates an average effect and applies it -- applies that average to all -- all manufacturers.

And what I'm trying to argue is that that average is not appropriate for Allergan.

Q. Okay. That's pretty straightforward.

Any other bases for the opinions in paragraph 24 that you haven't already touched on?

A. Well, similarly, the analysis done by Professor Cutler makes no attempt to distinguish between the different manufacturers. So, there is -- there is nothing in the Plaintiff analysis that ties specific manufacturers to harm.

So, what I've tried to do here is establish that that link does not exist in the case of Allergan.

Q. Any other bases for paragraph 24 or should we move on to paragraph 25?

MS. WELCH: Counsel, before you do that --

BY THE WITNESS:

A. Yes.

MS. WELCH: -- it's 1 o'clock.

MS. GEMAN: Oh.

MS. WELCH: So, I would suggest if you're done with 24, that it's probably a good time for a lunch break.

MS. GEMAN: That's fine with me if it's fine with the witness.

MR. KNAPP: Did we get through all of the bases for paragraph 24?

THE WITNESS: Yes, I think we can stop there.

MS. GEMAN: So, let's go off the record.

MS. WELCH: Okay.

THE VIDEOGRAPHER: We are off the record at 12:59 p.m.

(WHEREUPON, a recess was had from 12:59 to 1:47 p.m.)

THE VIDEOGRAPHER: We are back on the record at 1:47 p.m.

BY MS. GEMAN:

Q. Good afternoon.

A. Good afternoon.

Q. Do you know that you're still under oath?

A. I do.

Q. Thank you. Can we discuss the bases of your opinions in 25 and 26. And specifically if

there is a basis that you have not already identified, if you could please identify it now.

A. Okay. So, the opinion that I am expressing in 25 and 26 relates to really the appropriateness of assigning a calculation that is an average of or that purports to be an average of the effect of manufacturer detailing on sales to this specific company.

So, there are a variety of reasons why I don't think that that is an appropriate application of the average.

So, in particular, Allergan is a very small player in this market. So, if we start just by looking at their share of MMEs overall as well as in these two counties.

So, I have these presented in Figures 12, 13 and 14.

You can see that Norco you can't even identify because its sales were so small in Cuyahoga County and in Summit and nationally. And Kadian, you see just a little bit in 2009, 2010, 2011. But it's clearly a very, very small part of the entire market, whether we're looking at these counties or we're looking at it nationally.

Q. And the nationally is Figure 14, correct?

A. That's right. That's right.

Q. And who decided the different ways to present this data nationally and by county?

A. I made the decision. I thought it was appropriate since this case begins with a focus on these two counties in Ohio that I would show the figures for those two counties but also show whether there was any important difference that we observe in those two counties versus the national averages or the national level outcomes here.

So, you can see that there is a little bit of difference in the pattern of opioid sales overall in these two counties. So, it's a little bit lower in Summit than it is in Cuyahoga, for example. So, I think it is worthwhile looking at differences across these geographic regions.

But in whether I'm talking nationally or I'm talking in these specific counties, Allergan is a very, very small presence in the market.

Q. And just to be clear, when did Kadian and Norco come on the market?

A. So, I want to make sure that I answer

that accurately. So I will go to where I describe the history of these products.

So, in Section II.B I explain my understanding of the ownership of these products.

And I should say I'm going to focus mainly on Kadian and Norco because these were the two for which I understand there are specific allegations against Allergan.

So, beginning with Kadian, Kadian is an extended release version of morphine sulfate, and it was acquired by what was then Actavis at the end of 2008. So, I'm focusing on Allergan's ownership of Kadian starting at that point.

Norco is an older drug. It's hydrocodone. It was approved under an ANDA, so it was not a new chemical entity when it was first introduced onto the market and it's been -- so, it was present in the -- in the mid-1990s.

Q. So, for Figures 12, 13 and 14, there is no relevance for the years before 2009 for Kadian, correct?

A. That's right.

Q. So, why are they -- why are these figures here?

A. Again, to illustrate graphically that Allergan has a very, very small presence in this market.

Q. But it's not surprising that it had zero percent before 2009 because it didn't exist?

A. It was owned by a different firm.

Q. And do you -- do you include data for Kadian for the period of its ownership by Actavis?

A. That is the period of its ownership by Actavis. Actavis purchased the product at the end of 2008.

Q. I'm sorry. It was not a clear question.

Was any Kadian sold by anybody before late 2008?

A. Yes, a different firm owned the product at that point.

Q. And did you have -- do you have the data for those sales?

A. Yes, I do.

Q. Okay. And that's -- those are reflected in these charts?

A. They are -- they are reflected in the total sales of opioids but not broken out separately in yellow for the years that Allergan

did not own the product.

Q. I see. So, we don't know whether the size of the yellow bar would be the same size, smaller or larger than what we see for 2009 through 2011?

A. My recollection is that Kadian never had a very large market presence. But, again, I focused only on Allergan's responsibility, and that started at the end of 2008.

Q. So, we don't know whether the size of the yellow bar would be the same, smaller or larger than what we see of 2009 through '11, is that correct?

A. That is correct.

Q. And Norco is in blue, right? It's page 49.

A. Sorry.

Q. That's okay.

A. Gotten lost with all of my figures.

Yes, it's in blue.

Q. And is it -- your counsel will say calls for speculation. But is it that my eyes are so bad that I seem only to see a blue in 2001?

A. Your eyes are better than mine. I don't

even see it there.

Q. Okay.

A. So, I think I also have tables that break out the market shares. Yes. So, Figure 6, Figure 7 and Figure 8 give the -- give the actual amounts.

Q. Okay. And same question for the period before 2000 -- well, strike that.

When did Allergan start selling Norco, which, as you say, is an older drug?

A. I don't remember its exact approval date. I remember that it was approved under an ANDA, so it's been -- it is a version of an old drug. I have sales data starting in 1997 here.

So, you can see it was -- it was on the market in -- as of 1997, but, again, with very low sales, both in the two bellwether counties as well as in the U.S. overall.

Q. So, we don't know what sort of the blue lines would look like for the period before 2009, is that correct?

A. The blue line is Norco.

Q. Yes.

A. I have that in there before 2009.

Q. I see. Okay. Starting in '97?

A. Starting in '97, yes.

Q. Okay. So, sorry. You were saying that one basis for your opinion in paragraphs 25 and 26 is your opinion that Allergan and its predecessors were a small player?

A. Yes. And in addition to that, their presence on the -- in terms of detailing is also quite small.

So, for example, in Figure 3, I provide the breakdown of detailing contacts for these two products, for Norco and Kadian, compared to the Defendant and non-Defendant detailing going on in the same year. And you can see that in terms of the share of marketing activities, it's also very, very small for these two products.

Q. And you did not study the effect of the promotion of one opioid on the sale of the others, correct?

A. In some of my specifications, in particular where I'm looking at the county level and the relationship between Allergan details at the county level and shipments of opioids at the county level, that's a way of accounting for any

kind of effect of Allergan detailing on sales of other products.

Q. I'm sorry. I was asking the converse question.

You did not study the effect of the promotion by a marketer of one opioid on the sale of the others like, for example, the effect of Purdue and Teva's efforts on other opioid sales?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. Again, I focused on Allergan's detailing activities.

BY MS. GEMAN:

Q. So, the answer to my question is you did not study that effect, correct?

A. I studied that effect for Allergan.

Q. Again, the question is, did you study the effect of the promotion by a marketer of one opioid, such as Purdue, on the sale of opioids by other producers?

MS. WELCH: Objection to form, asked and answered.

BY THE WITNESS:

A. So, again, when I run a regression of

Allergan detailing, so that's one manufacturer's marketing, on shipments of all opioids in that county, I am in fact looking at the effect of one manufacturer's detailing on sales of their own but also other manufacturers' products.

BY MS. GEMAN:

Q. Did you study the effect of promotion by, for example, Purdue or Teva on sales of Allergan opioids?

A. No. Again, I focused on Allergan's detailing efforts and the effects of Allergan's detailing efforts.

Q. Any other bases for 25 and 26 that you have not already mentioned?

A. Yes. Let me remind myself.

So, I talked about Figure 3. I'd also like to draw your attention to Figure 4.

So, this is what Professor Rosenthal's depreciated detailing stock, which, by the way, really isn't a depreciated detailing stock because she has this very strange estimate of an appreciation rate rather than a depreciation rate of marketing.

But you can see here the difference

between what she calculates for the entire market and what that stock would be if Kadian and Norco were excluded.

And the fact that you don't see much of a difference in those two lines means that it's very, very difficult to identify -- to attribute any of the causal effect that she's claiming to these two products.

Q. Okay.

A. In Figure 5, I show the difference between Alpharma detailing efforts and Kadian detailing efforts. When Kadian took -- when Allergan took ownership in 2009, you see a substantial reduction in the efforts to detail this product.

So, again, this is a very small product. It has a very small share of detailing. It has a very small share of the market. And even within this -- within this, when Allergan took ownership, its detailing presence further fell.

So, other evidence that the efforts of Allergan did not materially expand the total market for opioids have to do with the timing of when that marketing took place. This is true for Norco as

well.

Q. And with respect to Figure 5, can you explain the -- what you're looking at with the X and Y axes here?

A. Yes. So, on the left hand axis I've plotted MMEs. So, think of this as sales. On the right hand axis, I've plotted detailing contacts.

So, this is the measure that Professor Rosenthal is using a proxy for. And although I used here the Kadian-specific call note data that Allergan produced, at least for the detailing contacts after -- sorry. No. I take that back.

This is based on Professor Rosenthal's data. There is a sort of strange observation in 2017 because the IMS data records some detailing contacts for Kadian although the call notes do not.

Q. I mean, you understand that the pharma companies sort of stopped keeping call notes at some point generally, right?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. I understand that I was provided call notes by Allergan that allowed me to do a very detail county-specific analysis of their detailing

efforts.

BY MS. GEMAN:

Q. No, but I guess what I'm asking is, did you take into account the fact that many pharma companies either because -- for various reasons we need not go into, but various pharma companies have jettisoned call notes? Do you understand that?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. I can't speak to the decisions of these individual companies, although I don't see how that impacts the analysis that I've presented here.

BY MS. GEMAN:

Q. So, how does the -- I guess what's puzzling to me about this figure is -- oh, I see.

So, the right hand is the detailing contacts?

A. That's right.

Q. So that the detailing contacts is reflected by the yellow and black lines?

A. That's correct.

Q. Correct? Okay. And the MMEs are the other line.

So, did you compare the Alpharma Kadian

detailing to that of the other manufacturing companies?

A. Compare in what sense?

Q. Compare the number of detailing contacts of Alpharma for its opioid relative to the equivalent numbers of other pharma companies for their opioids?

A. No, I did not do a manufacturer-by-manufacturer specific breakdown of detailing other than to pull apart Kadian and Allergan products.

Q. Do you have any opinion or are you offering any opinion on Alpharma's share of opioid marketing relative to any other manufacturers?

A. I'm not offering an opinion on the relative shares of any manufacturers outside of Allergan.

Q. So, the answer is no?

A. The answer is I haven't done that calculation. It's in Professor Rosenthal's data. So, that's a statistic that someone could easily calculate. But it was not -- my interest in this report was focused on Allergan.

Q. And you didn't consider or is it fair to

say that you didn't consider the marketing of Alpharma to be relevant to your opinions?

A. That's correct. I focused on the effect of Allergan's behavior.

Q. Okay. Any other bases for paragraphs 25 and 26?

A. Okay. So, what the point that I was trying to make actually with Figure 5 is that when you see this solid black line, which is increasing from 1993 up through 2010 or 2011 or so, so that's total sales of opioids going up over time, and then you see where Allergan is detailing Kadian, so in what time period, the point that I'd like to make here is that Allergan is detailing Kadian when the market is already at its peak.

So, it's not -- it's very unlikely that Allergan is expanding the market at this point. The market is already at its maximum. And the additional details from Allergan are not adding additional sales to the market.

Instead, what's likely to be happening here is that to some extent, to the extent that Kadian detailing is at all successful and I can talk about whether that's true later on, it's

successful in stealing share away from other products, not in expanding the entire market.

Q. And did you analyze the call notes to ascertain or to cross-check diversion -- not diversion. I'm sorry -- substitution?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. I don't think that such information would be available in the call notes. The call notes record that a sales representative visited a physician and occasionally provided some information about the content of that visit although not -- not in a very comprehensive way.

So, to observe what happens with that physician, one would need a different data source tracking the physician's prescribing behavior. But the call notes would not have that.

BY MS. GEMAN:

Q. Have you ever seen call notes before this case?

A. No.

Q. Have you -- did you seek out any physician recall surveys or other sources to support your guess or hypothesis about substitution

versus new prescriptions?

MS. WELCH: Object.

BY THE WITNESS:

A. No, I relied on the data that I've described here.

BY MS. GEMAN:

Q. Okay. Any other bases for your opinions in 25 and 26?

A. Sure. So, I just told you about Kadian. I can also tell you about Norco.

So, detailing of Norco stopped pretty early on, and Norco's sales began to decline in around 2000. That happened when Norco was -- sales were declining. That happened during a period of substantial growth in overall opioids.

So, again, it's not -- from these patterns, this suggests that Allergan, Allergan products are not contributing to an increase in opioid sales because Norco sales are going down when the rest of the market is going up.

Q. And you're looking at figure?

A. I'm looking at paragraph 89.

Q. Any other bases to the opinions in 25 and 26?

A. Yes. So, as I describe largely in Section II.C, this is a more qualitative assessment because there wasn't -- I didn't always have a lot of data to work with here.

But the qualitative assessment that I can provide is that the kind of marketing that Allergan was doing particularly for Kadian was fairly limited. It was restricted to detailing and a little bit of telemarketing. It did not include a lot of the other activities that Plaintiffs have identified as sources of harm or unlawful.

So, the nature of Allergan's marketing was quite different than that at least alleged by Plaintiffs to be the case for other manufacturers.

Q. So, for example, Plaintiffs talked about the use of KOLs?

A. That's right.

Q. Do you have an opinion as to whether it's been efficacious for pharmaceutical manufacturers to essentially utilize and pay KOLs?

A. I don't have an opinion on that. That wasn't something I could analyze in this report.

Q. So, are you basically assuming that -- would you agree that for the absence of or for the

purported absence of such activities by Allergan to be relevant, those other activities would have to be efficacious, correct?

A. As I understand it, that's the Plaintiff allegation.

Q. So, you are accepting that allegation for purpose of your statement?

A. I'm saying that if Plaintiffs establish that this marketing is unlawful and effective, it doesn't apply to Allergan because Allergan did not engage in those activities.

Q. But you're making an affirmative statement that you believe Allergan was detailing or marketing generally less than the other companies, correct?

A. Certainly their share of total detailing was quite small.

Q. So, is it your opinion that Allergan's failure to employ these other marketing channels negatively affected the sales of their products?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. I've offered no opinion on that relationship.

BY MS. GEMAN:

Q. All right. Any other bases or do you want to move on to paragraph 27?

A. Well, the only other point that I would make related to paragraph 26 is the fact that much of the 85% of the Allergan detailing of Kadian occurred after Allergan had received a warning letter from the FDA and taken corrective action.

So, since the FDA approved their marketing materials in response to that warning letter, I would say 85% of the detailing contacts here seem unlikely to be unlawful because they were done under the -- with the approval of the FDA.

Q. And is it your testimony that the other 15% were unlawful?

A. I can't offer an opinion about that. I know what the FDA's concerns were. I can see that Allergan made an effort to respond to those concerns and that the FDA accepted those responses.

Q. So, is your testimony that you're confident the 85% were lawful but you can't say at all whether the 15% were unlawful?

A. I can't comment on whether any of it was lawful because I'm not a compliance expert of that

sort.

What I can say is 85% of it occurred with the approval -- the express approval of the FDA.

Q. And did you make any attempt to study the impact of the 15% that was we could say unlawful or that the FDA had warned about on the prescription patterns subsequent to the warning letter?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. At some point we did -- with my team we worked on some exploratory analysis to see whether there was any kind of difference, and there isn't much data to work with because there was only 15% of the details occurring before the warning letter. So, we couldn't really say anything particular -- we couldn't really say anything.

What I also have done is look at prescriber level behavior, and I've provided some charts. So, for example, starting with Figure 16, 17 and 18 and in the backup materials I provide the corresponding chart for all of the physicians that I could identify having received a Kadian detail in

these two counties and so I show you their prescribing patterns before they received a detail and after they received a detail, and in almost every case there was either no change or a decline in their prescribing.

BY MS. GEMAN:

Q. And did you produce in your backup the analysis you did to test the impact of the unlawful or pre-warning letter marketing on subsequent prescriptions?

A. No.

MS. WELCH: Objection to form.

MS. GEMAN: Okay. Can you produce that or we would request the production of that.

BY MS. GEMAN:

Q. Okay. Any other bases for 25 and 26 or do you want to tell us if there are bases for paragraph 27 that you have not already touched on?

A. That's all that's occurring to me right now. It's possible I will remember something else later.

Q. What about paragraph 28. Do you have any bases for your opinions in 28 that you have not already testified to?

I think we covered this, but obviously take the time you need to read the opinions and advise.

A. I've already made some of these points about Kadian and Norco specifically and the patterns of their sales versus the rest of the market.

I've also mentioned qualitative evidence on the objectives of Allergan marketing. I think that's covered more in other -- well, in depositions from Allergan experts.

But my understanding of their marketing strategy was that they expected to lose share over time. They expected prescribing to go down. And their goal was to maintain share.

And that is not consistent with efforts to expand the total market. Instead, they were targeting physicians who were already prescribing opioids and in particular either -- normally already prescribing Kadian or very similar products like Avinza, and that's where they focus their effort. They weren't targeting physicians who had not previously been prescribing a lot of opioids.

So, to the extent that their detailing

worked in terms of increasing prescriptions of Kadian, it almost certainly took prescription away from some other product. So, again, it's not contributing to the total -- it's not adding to total sales in opioids.

Q. Well, that's your assumption. You acknowledged you haven't demonstrated that, correct?

A. I've demonstrated -- well, that's what Plaintiffs say was their objection and I have demonstrated that, for example, with the prescribers that I could identify in these two counties, I see no increase.

Q. Oh. Was that the end of your answer?

A. Sorry. I think I'm repeating myself.

So, out of the 41 prescribers that I could identify as having received an Allergan detail, these were all already physicians who had been prescribing opioids in the past. In general, for 39 out of 41, I don't see an increase in their prescribing of Kadian.

And if I look at their other prescribing patterns, it just doesn't look like this is consistent with the story of Allergan sends a

detail to a doctor and all of a sudden this doctor starts writing lots of prescriptions and at very high levels of MMEs, et cetera.

Q. So, I just want you to point me to where in your report you think you have demonstrated versus assumed that Kadian detailing took prescription away from other products?

A. Again, what I've shown is that when Kadian sales were increasing, the market was already at its maximum. So, there was nowhere to go.

When Kadian sales increase, if the total in the market is either holding steady or falling, then that -- those sales going to Kadian must be coming from something else.

Q. So, you're inferring from that. You have not --

A. I'm inferring from the patterns that I observe in the data.

Q. You haven't demonstrated -- you acknowledge you haven't demonstrated that directly, correct?

A. I did not look at specific substitution between opioid products.

Q. So, you have no data-informed opinions about substitution --

MS. WELCH: Objection.

BY MS. GEMAN:

Q. -- between opioid products, correct?

MS. WELCH: Objection.

BY THE WITNESS:

A. Again, what I've shown is that when the increase of Kadian sales is present, there is not an overall increase in the market.

So, just logically, that incremental sale of Kadian is not a new sale to the market. It's coming from something else.

BY MS. GEMAN:

Q. Is that in your view an expert opinion resulting from an application of your expertise or is that, in your view, sort of a common sense opinion?

A. I don't think a lot of statistical sophistication is necessary to draw that conclusion from the patterns in the data.

Q. So, that's basically a common sense conclusion, not a conclusion that has required an application of expertise, correct?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. My expertise is in combining many different data sources, looking at the patterns that one can see in the data and doing the best that one can to establish causality or evidence consistent with a hypothesis.

What I'm trying to explain is that the hypothesis of the Plaintiffs is that detailing led to incremental sales of opioids and those sales led to harm.

In the case of Kadian, that detailing did not appear to change sales of Kadian very much. Sales of Kadian did not appear -- were not occurring at a time when the overall market was growing.

So, those sales of Kadian must be coming from some other existing opioid and, therefore, the Plaintiffs do not have evidence to suggest that Allergan detailing led to an expansion of the opioid market --

BY MS. GEMAN:

Q. But again --

A. -- or harm.

Q. -- you haven't -- just you have not studied substitution?

A. I have studied substitution indirectly in several ways. So, I've presented the figures. And, again, I will come back to the regressions that I did of the effect of Kadian detailing on shipments at the county level where I see that shipments at the county level are not statistically and positively related to Allergan detailing at the county level, which, again, suggests that Allergan detailing did not expand the market and also did not cause harm.

So, if the market did not expand, then whatever sales had to be from existing sales. It's just reallocation of market shares. It's not -- the pie is not growing at that point.

Q. How many counties did you look at again?

A. I looked at the 404 large counties that Professor Cutler used.

Q. And what was the range of numbers of observations you were able to look at in those 404?

A. So, there are 404 counties and there would be one observation for each year that I observe Kadian detailing in the data. So, 2009

through 2012.

Q. So, in a sense each -- so, in a sense you made separate cells for county and for year, correct?

A. The structure of the dataset is a county-year observation.

Q. Okay.

A. It's the same as in Professor Cutler's analysis.

Q. And did you -- did you do counties over the four-year time period?

A. Yes. So, I looked at 2009 through 2012 or '13.

Q. Different question. Did you do any analysis where each county was one cell and a year was a control versus a separate cell?

A. I don't think I'm understanding your question.

Q. Sure. So, one way to do the analysis would say you have 404 counties and you have four years and each sort of cell is a country-year combination, right?

Another way to do an analysis would be to look at 404 counties and for each one look at

the four-year time period.

A. To me, that sounds like the same thing. So, I have 404 counties. I can look at just one year of data. That's essentially what I have done in the charts that -- let's see. It's Figure 25. Right. So, that gives you 2010.

One observation for each county, lined up in the order of opioid shipments per day, MMEs per capita per day. And below I have the corresponding figure of Allergan details per capita for each of those 404 counties.

So, I think what you're asking me is did I run a regression year by year using this cross section of counties. That would be --

Q. That could be one --

A. Well, that would be one cell per county.

Q. Correct.

A. Right?

Q. Well, that would be -- I think that would be one -- yes, that would be one cell per county. And that analysis was run and is in your backup?

A. I don't recall running the county level analysis year by year in part because I could see

it from these charts, which are year by year, and as well because it's in general useful to exploit both cross-sectional variation as well as time series variation. And that was the appropriate specification.

Q. And did you run the year level analysis county by county?

A. No, I did not. In a way, that's accounted for in the regressions that I've run because I have county-fixed effects, so I'm looking at changes over time within each county. But I didn't run 404 individual regressions.

Q. Any other -- actually, give me one second, please. I had a question I wanted to ask you, but it's gone right out of my head.

As they used to say when there were phones, if it's important, they will call back. If it's important, my brain will feed it to me again. Sorry about that.

So, do you have any other bases for your opinions in paragraphs 27 or 28? I know we have already moved off 27, but I want to just make sure.

A. Well, let me just reiterate that Professor Rosenthal states over and over that all

she cares about is market expansion.

So, what I've tried to demonstrate is that there is no market expansion that can be easily attributed to Allergan marketing efforts.

So, I think it's an inappropriate assumption to then take an estimate across all manufacturers across all years when there are different marketing strategies, there is different rates of growth in the market overall.

During some periods it's entirely possible that additional marketing efforts led to market expansion, but for Allergan products, that's not what I see in the data.

Q. Why would Allergan detail doctors who are already prescribing Kadian and Norco?

A. I can tell you what they stated in depositions or I can give you an economic argument for why that's the case. Which one would you prefer?

Q. I'll take both.

A. So, they stated in their depositions, the various Allergan witnesses stated that their goal was to maintain share and that they wanted to target their loyalists, their Kadian loyalists, so

those who are already familiar with the product, who had experience with the product, to encourage them to continue to prescribe because they expected sales to decline.

Q. And to continue to prescribe to new patients?

A. I didn't say that, no.

Q. Well, is that your assumption?

A. Well, at some level we don't want -- as I understand the appropriate use of opioids, you would not want Kadian to -- Allergan to encourage doctors to keep a patient, old patients, on Kadian forever.

So, it's true that the appropriate use of Kadian might be several months, but probably we shouldn't see it over ten years. That I would view as more problematic.

But as doctors see new patients, they present with different characteristics, with different medical needs. And so, yes, some of them are new patients, but the -- but the -- so, it has to be a new prescription in that sense.

But it's not a doctor who all of a sudden converts, converts his prescribing to

massive prescribing of Kadian.

Q. But, again, Allergan wanted the doctors to keep prescribing Kadian to new patients, correct?

A. Every firm that's doing marketing wants sales -- wants marketing to affect sales.

So, yes, a detailing visit was done with the goal of encouraging the prescription of Kadian as opposed to Avinza or MS Contin or some other opioid.

Q. And did you do any analysis of how much of the consistency of prescriptions was a function of the doctor having new patients to prescribe it to or having very long-term prescriptions of extant patients?

A. Yes. I have some charts that speak to that.

So, in Figure 19 I show the percentage of patients who saw the doctors in the counties where I'm focused where I could identify physicians who had been detailed at least once by Allergan in these two counties. This is page 58.

So, what I'm showing here is there's a bar for each physician and in parentheses is the

number of Kadian patients. And on the vertical axis here, you have the percent of patients that this -- that each of these doctors saw who did not receive Kadian.

So, most of them saw patients without prescribing Kadian. So, this suggests that they weren't prescribing a lot of Kadian to new patients. They were only prescribing Kadian in rare cases where they considered it hopefully clinically appropriate.

In Figure 20, I show that when these patients were prescribed Kadian, most of the time they had been started on a different opioid product. So, Kadian was what doctors might switch to depending on a patient's needs, specific clinical indications, et cetera.

But, again, it's not consistent with the idea that a doctor received a detail from Allergan and all of a sudden started writing lots and lots prescriptions for Kadian. And, in particular, if they were writing a prescription for opioids, they would start with something else first.

Q. All right. Other bases for your opinions in paragraphs 28 or 27?

Actually, I'm sorry. Can I just ask you a question about Figure 20.

Which -- do you recall what kind of doctor Dr. Akhtar-Zaidi is?

A. No.

Q. Okay. Any other bases for your opinions in 27 and 28? And, if not, can you identify the bases of your opinions in paragraph 29 that you have not already identified?

A. My opinion in paragraph 29 is backed up with the analysis that I described now a few times where I tried to more directly test the relationship between county level detailing of Kadian, county level shipments and county level mortality. So, graphically that was Figures 25 through 28.

And the regression analysis is essentially a panel study of those 404 counties looking -- experimenting with different ways of including detailing efforts on -- as an explanatory variable to verify the robustness of the results.

Q. And we talked about those figures a couple hours ago, correct?

A. Yes.

Q. Okay. And any other bases of your opinion in -- as set forth in paragraph 29 other than what you've identified?

A. No. That's -- that's the key.

Q. Okay.

A. The key source of that opinion.

Q. All right. And can you please read the first sentence of paragraph 30.

A. "In Sections III through IV, I establish that Plaintiffs' economic experts have failed to demonstrate that any harm was caused by Allergan."

Q. And that's -- is that basically your upshot?

A. I'm not sure what you mean by "upshot."

Q. Is that basically your summary opinion?

A. Yes. I guess if I were doing a PowerPoint slide for an MBA class, I would say this is one of the key take-aways, that there's been no direct link between Allergan's activities and mortality.

Q. What do you think is the relevance to your opinions, if any, of the FDA warning letter?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. My focus in this report is on the outcomes, so what are the effects that I can observe of the marketing.

So, I don't form an opinion on whether it was lawful marketing or unlawful marketing. I'm just looking at the impact, what can I say about the effects.

BY MS. GEMAN:

Q. So, my question was a little bit different.

What do you think is the relevance to your opinions, if any, of the FDA warning letter? Is it irrelevant to your opinions?

A. It's irrelevant in the sense that what I'm focused on is the outcome and so if the FDA warning letter is an indicator of whether something is lawful or not or problematic or not, that doesn't -- it doesn't directly enter into my analysis because, as the Plaintiffs do, I don't distinguish between lawful and unlawful marketing. I'm just looking at what the effect is.

Q. And was the FDA warning letter relevant to any of the data analysis? Strike that.

Other than what we've already talked

about, did you consider the FDA letter relevant or informative of any of your critiques of Plaintiffs' models?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. One of my overarching critiques of particularly Professor Rosenthal's model is that she is applying an average effect of detailing to Allergan, which I think is inappropriate.

So, an example of this -- again, this isn't a statistical analysis that I'm about to describe. But, for example, if qualitatively we think that the response to the warning letter through the corrective action, which involved several months of sending the sales force out to physician offices, to remove material that the FDA was worried about, to leave behind letters that explained with FDA-approved language about the risks and benefits of Kadian, you might think that that kind of corrective action would not be expected to increase Kadian sales.

It shows up as detailing in Professor Rosenthal's data. It shows up as detailing visits in my data as well. And I guess I'm not that

surprised that I don't see a big impact of Kadian detailing when so much of it involves corrective action.

But that's not a statistical analysis. That's just saying to the extent that I know anything about the content of these detailing visits, they suggest -- the content is unlikely to be market-expanding.

BY MS. GEMAN:

Q. And what do you mean by corrective action?

A. I mean -- let's see. I describe what the corrective action was following the FDA warning letter.

Q. Do you understand that corrective action to have been voluntary?

MR. KNAPP: I don't think the witness had finished her answer to the last question.

BY MS. GEMAN:

Q. Oh. Had you finished the answer?

A. No, I was going to point --

Q. Go ahead.

A. -- to where I describe the corrective action in the report.

So, Allergan received a warning letter from the FDA on February 18 of 2010 and the next day, as I understand it, informed its sales force that they should cease all marketing.

During that time Allergan worked with the FDA to agree on language included in a letter sent to -- left in all of the physician offices where physicians who had potentially received this marketing that the FDA was worried about, that was the corrective action was to remove any material that the FDA had been worried about and to leave behind other information.

MS. GEMAN: Can we take a quick break?

MS. WELCH: Sure.

THE VIDEOGRAPHER: We are off the record at 2:40 p.m.

(WHEREUPON, a recess was had from 2:40 to 3:04 p.m.)

THE VIDEOGRAPHER: We are back on the record at 3:04 p.m.

THE REPORTER: Counsel on the phone, can we have everybody re-identify themselves for the afternoon session.

MS. WELCH: And, again, counsel and

non-counsel.

THE REPORTER: Anybody on the phone, counsel, non-counsel.

MS. RODGERS: Hi. This is Megan Rodgers with Covington & Burling for McKesson.

THE REPORTER: Anyone else?

MR. LEIGH: This is Daniel Leigh from O'Melveny. I'm on the line.

THE REPORTER: Okay.

BY MS. GEMAN:

Q. Margaret, would you be so kind to turn back to your presentations, which are Section A.4.e of your Exhibit A. I'm sorry. Your Appendix A.

And because we don't have a list of the topics on which you presented, would you be able to identify at which seminars or presentations you prepared papers and/or gave talks on topics that you consider relevant to this case.

A. Honestly, nothing occurs to me in particular because I don't have a paper on opioids. So, I certainly haven't presented or opined in any public fora on that.

And even papers directly concerning marketing, that would have been back in 2001 or

2002; and I believe that my co-authors presented those papers. I don't recall having done so myself. So, all of the talks from that period of time were about different papers.

Q. And what are the kind of general themes about the talks that you've given?

A. In general, they're going to be presentations, research seminars related to specific papers that I've listed in my CV.

Q. Relating to competition and innovation and the subjects we were discussing earlier today?

A. In general, an academic seminar would be about a specific paper, and that's the bulk of what I have listed here.

I have not included, for example, every -- every panel discussion where there was nothing that I presented and it was just an open-ended discussion about various topics.

But I have never participated in any such panel where opioids was a focus.

Q. And even if opioids was not a focus, have you participated in any panel in which the effect of pharmaceutical marketing on sales was a focus?

A. Not that I can recall, no.

Q. Have you ever created a damage model?

MS. WELCH: Objection to form.

BY THE WITNESS:

A. No, I've never been retained as an expert witness in order to do that kind of assessment or -- yeah.

The only time that it came up, as I mentioned before, I was retained once before as an expert. The other side was alleging damages. I was preparing to rebut that, but I did not develop a damages model myself.

BY MS. GEMAN:

Q. That was the 3M matter?

A. That's right.

Q. And what -- what was the allegation by the Plaintiffs?

A. That the Plaintiffs had purchased a product portfolio from 3M, a portfolio of pharmaceutical products in Europe. One of -- one of the more important products then went through a price review in France and experienced a substantial price cut from the French government, and the allegation was that that possibility had

not been adequately represented.

Q. Have you ever in any context, meaning as a research paper or as a teaching exercise, ever quantified the harm from conduct by a pharmaceutical company?

A. No, I can't recall any specific estimation like that.

Q. Have you ever attempted to quantify the harm from any sort of misconduct by any type of company?

A. I think it depends on how one wants to define harm. So, I've certainly looked at what is the implication for the availability of a product as a result of pharmaceutical launch strategies, for example.

And, so, if one interprets the lack of availability of a product as harm, which some might do, then, yes, that's been an element of some papers I've written.

But it has not been described in a legal sense as this is the -- this is a quantum of harm that I can specifically attribute to this particular action.

Q. Have you -- in those instances when you

looked at the availability of a product on -- well, strike that.

Have you ever looked at the impact of the inavailability of a product?

A. In terms of tying that to some health outcome, for example? No, I have not.

Q. Okay. What about an analysis of any harm to any sort of public entity or municipality from the conduct of a corporation?

A. No. Not that I can recall.

Q. What do you plan on doing for this case between now and trial?

A. So, as I've noted in the beginning of my report, should new material or information become available, it's possible that I would have to revise or issue a supplemental report if my opinions changed as a consequence of those materials or that -- or that information.

We've already discussed the possibility of a supplemental report specific to the allocation of products by Dr. McCann.

To be honest, I've been focused on preparing for this deposition and have not given a lot of thought to what I'll be doing this summer.

Q. Have you been asked to do anything by counsel?

A. Not to date, no.

Q. And where will you be in October? Would you typically be in Paris?

A. I live in Paris. So, by default that's where I am, yes.

Q. Are you teaching this fall?

A. I will teach a 30-hour course which takes place over a one-week period towards the end of November. And as I mentioned, some of my teaching obligations, it's not formal lecturing, I do a lot of work with individual students or with a group of students. So, that is ongoing throughout the term.

Q. Do you believe that there is information that you do not have that would either strengthen or weaken your opinions?

A. There is always the possibility of obtaining more detailed data that would allow a more refined analysis.

Q. And are you actively seeking that data?

A. My understanding is that a request for detailed claims data has been made. My team has

received some, but at this point it seems too incomplete for us to do much serious analysis.

Q. Received from whom?

A. From the Plaintiffs.

Q. And have you been asked to do any analysis of that data?

A. It was something that we considered in preparing this report. Unfortunately, it didn't -- some of it we received quite late and it was incomplete. So, it ended up not being an element in this report.

Q. Were there any documents or testimony that you requested but were not provided with?

A. No.

Q. And do you feel there is anything more you need to review to support your opinions?

A. Again, I would be thrilled to have more detailed data in order to analyze at a more nuanced level the link between any kind of Allergan behavior and the outcomes that the Plaintiffs are worried about or alleging.

MS. GEMAN: I appreciate your time today. I pass it to your -- I pass it, meaning this deposition and the questioning, to your counsel.

MS. WELCH: We have nothing.

MS. CASTLES: Nothing.

MS. COONEY: No questions.

THE VIDEOGRAPHER: Okay. We are off the record at 3:16 p.m. This concludes the videotaped deposition of Margaret Kyle.

(Time Noted: 3:16 p.m.)

FURTHER DEPONENT SAITH NAUGHT.

I, CORINNE T. MARUT, C.S.R. No. 84-1968, Registered Professional Reporter and Certified Shorthand Reporter, do hereby certify:

That previous to the commencement of the examination of the witness, the witness was duly sworn to testify the whole truth concerning the matters herein;

That the foregoing deposition transcript was reported stenographically by me, was thereafter reduced to typewriting under my personal direction and constitutes a true record of the testimony given and the proceedings had;

That the said deposition was taken before me at the time and place specified;

That the reading and signing by the witness of the deposition transcript was agreed upon as stated herein;

That I am not a relative or employee or attorney or counsel, nor a relative or employee of such attorney or counsel for any of the parties hereto, nor interested directly or indirectly in the outcome of this action.

Corinne T Marut

CORINNE T. MARUT, Certified Reporter

(The foregoing certification of this transcript does not apply to any reproduction of the same by any means, unless under the direct control and/or supervision of the certifying reporter.)

INSTRUCTIONS TO WITNESS

Please read your deposition over carefully and make any necessary corrections. You should state the reason in the appropriate space on the errata sheet for any corrections that are made.

After doing so, please sign the errata sheet and date it.

You are signing same subject to the changes you have noted on the errata sheet, which will be attached to your deposition.

It is imperative that you return the original errata sheet to the deposing attorney within thirty (30) days of receipt of the deposition transcript by you. If you fail to do so, the deposition transcript may be deemed to be accurate and may be used in court.

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E R R A T A

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ACKNOWLEDGMENT OF DEPONENT

I, MARGARET KYLE, Ph.D., do hereby certify under oath that I have read the foregoing pages, and that the same is a correct transcription of the answers given by me to the questions therein propounded, except for the corrections or changes in form or substance, if any, noted in the attached Errata Sheet.

_____

MARGARET KYLE, Ph.D. DATE

Subscribed and sworn
to before me this
_____ day of _____, 20____.
My commission expires:_____

_____ Notary Public

LAWYER'S NOTES

PAGE LINE